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ABSTRACT

A survey was conducted to learn what Kentucky high school students think about the pursuit of learning opportunities after high school and how they are investing their time in anticipation of possible postsecondary attendance. The survey was sent to 3,000 16- and 17-year-olds, and nearly 1,100 responded. Nearly all were planning to go on for more schooling, and most intended to go to school in Kentucky. As a result, the survey sample represents primarily college-bound youth. The type of school students want to attend influenced their academic preparation. Those planning on a 4-year college were doing more homework, taking more demanding courses, and achieving higher grades than those planning on a community college. Students rated the instruction they had received in mathematics, science, and English relatively highly, but gave lower marks to second language instruction. Most students had access to a computer and had learned basic computer skills. The survey shows that students decided to pursue a college education quite early in their careers, with more than half deciding by middle school or earlier. Students knew little about ways to finance college. It was also apparent that some of the best academically prepared students were planning to attend college out of the state. Three appendixes contain details about the survey sample, the survey itself, and an excerpt from a document related to Kentucky's education reform effort. (Contains 18 tables and 12 figures.) (SLD)

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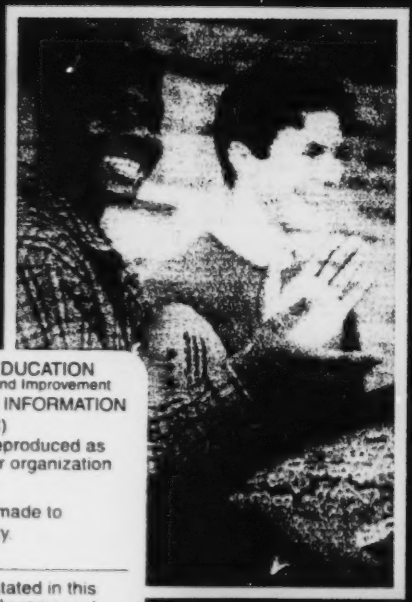

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Department of Education Policy Studies and Evaluation

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PREFACE

As part of its mission to advise and inform the Governor, the General Assembly, and the public about the long-term implications of policies, the Kentucky Long-Term Policy Research Center and the Policy Analysis Center for Kentucky Education at the University of Kentucky examine the Commonwealth's extraordinary goal of increasing postsecondary enrollments by 50 percent over the next 20 years. Since many of these new enrollees will come from the ranks of freshly minted high school graduates, we report on our survey of Kentucky high school students. This survey, which was administered by the University of Kentucky Survey Research Center, was designed to learn what Kentucky high school students think about the pursuit of learning opportunities after high school and how they are investing their time in anticipation of possible postsecondary attendance. From policymakers at every level to ordinary citizens of the Commonwealth, all who are interested in and concerned about improving the Commonwealth's educational status will find this report of interest.

THE KENTUCKY LONG-TERM POLICY RESEARCH CENTER

The Kentucky Long-Term Policy Research Center was created by the General Assembly in 1992 to bring a broader context to the decision-making process. The Center's mission is to illuminate the long-range implications of current policies, emerging issues, and trends influencing the Commonwealth's future. The Center has a responsibility to identify and study issues of long-term significance to the Commonwealth and to serve as a mechanism for coordinating resources and groups to focus on long-range planning. Michael T. Childress serves as the Executive Director of the Kentucky Long-Term Policy Research Center. Those interested in further information about the Center should contact his office directly at (502) 564-2851 or info@kltprc.net.

POLICY ANALYSIS CENTER FOR KENTUCKY EDUCATION

The Policy Analysis Center for Kentucky Education (PACKE) is a nonpartisan, independent educational policy research center sponsored by the Department of Educational Policy Studies and Evaluation in the College of Education at the University of Kentucky. The members of the Department also serve in the Center and, along with policy researchers in other units of the University and regional state universities, conduct policy research studies on a variety of policy issues and problems in education. The overriding concern of the Center is to provide timely information about and analyses of the educational policy concerns of legislative and other policymakers in Kentucky. For more information on PACKE, contact Stephen Clements at (859) 257-2628 or sclem1@pop.uky.edu.

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SUMMARY

More than a decade ago, Kentucky lawmakers took an unusual and even audacious step: they committed themselves to a sweeping 20-year program aimed at overhauling the state's entire public school system. The scope of the 1990 school reform legislation and the increased funding for education that accompanied it clearly signal the legislature's belief that education is the keystone of the bridge to a better life for all Kentuckians. Although the final outcome of that effort remains to be seen, several mid-point reviews showed positive results. But the state leadership has not remained idle. More recently, the General Assembly passed House Bill 1, a measure that reorganized the state's postsecondary education system and committed additional funds with an eye to improving the quality of all higher education institutions and increasing the percent of the population that attends them by half.

AN IMPRESSIVE GOAL THAT FACES SERIOUS OBSTACLES

While a goal of dramatically increasing postsecondary enrollment by 50 percent is not unprecedented in Kentucky's history, the legislature has indeed set the bar high, particularly in light of the challenges that have to be overcome. Enrollment in Kentucky postsecondary schools shot up between 1950 and 1990, rising from 22,000 students to 150,000. But it has been relatively flat since then, implying that any expansion will have to come from those portions of the population that traditionally have not sought education beyond high school. And therein lies the challenge. To achieve the desired expansion, the state will have to break through several barriers, including those erected by a chronic lack of emphasis on postsecondary education, the state's demography, and a variety of social conditions.

Recent efforts notwithstanding, the state does not have a robust tradition of supporting public postsecondary education. In 1904, the state commitment was less than $40,000—smaller than what some cities gave their high schools. In part, this lack of support reflected a state whose major industries—mining and farm-

ing—did not necessarily require higher education. Kentucky's historically low literacy rate also played a role. State fiscal support for postsecondary education did increase considerably from the 1960s onward as community colleges were built and the state universities expanded. But decades of postsecondary neglect take decades of work and investment to overcome.

Furthermore, the uneven distribution of the education talent in the state has important implications for the goal of increasing postsecondary enrollment. The most educated members of the state tend to cluster around the urban triangle formed by Lexington, Louisville, and Covington. The education levels in the rural eastern and southcentral part of the state are markedly lower. To gain substantial enrollment increases, policymakers will have to find ways to entice more students from these areas to pursue higher education.

To do that, they will have to offset a spectrum of social problems. Not only are these areas the least educated, they are the poorest. With that poverty comes conditions that make it difficult to pursue postsecondary schooling. These include first-generation status, welfare, and single parenthood. First-generation status refers to those whose parents never attended college. Absence of a family tradition of higher education makes it difficult to break the pattern of undereducation, in part because the parents know less about the process and thus may not ensure that key preparatory steps are taken and in part because they simply may value it less than families with a strong educational tradition. New welfare work rules make it more difficult for recipients to attend school, and this increased difficulty is likely to manifest itself in reduced enrollments in community colleges, the school of choice for many welfare recipients. Single parenthood also makes education after high school more difficult. Single parents, largely women, tend to earn less, and the research data suggest they do not ensure that their children take the steps critical to gaining admission to higher education (e.g., taking the requisite math, science, and language courses) at the same rate as married parents.

What High School Students Think and Know About Higher Education

Key to any effort to expand the portion of the state's population that pursues education beyond high school are the attitudes of Kentucky's youth. To learn more about their attitudes and opinions, the Kentucky Long-Term Policy Research Center and the Policy Analysis Center for Kentucky Education at the University of Kentucky created a survey that was sent to 3,000 16- and 17-year-olds last year. Nearly 1,100 responded, and noteworthy results include the following:

- Nearly all the respondents are planning on more school, and most intend to go to school in Kentucky. Hence, the survey sample represents primarily "college-bound" youth.

- The type of school individuals want to attend heavily influences their academic preparation. As measured by the amount of homework done, demanding academic courses taken, and grades achieved, those planning

on a four-year college do more or better than those planning on a community college.

• Students rate the instruction they have received in math, science, and English relatively highly, but foreign language instruction receives substantially lower marks. School services such as education and career planning also score low.

• Most students have access to a computer, know how to use it, and, perhaps reflecting the success of the state's efforts to boost computer literacy, have learned basic skills such as word processing and spreadsheets in school.

• Kentucky students want to go to college for the same reasons as other youth across the nation: to get a more rewarding job, to make more money, to learn more about things that interest them,.or to prepare for a specific career.

• In an especially important finding, the survey shows that students decide to pursue higher education quite early in their careers—over half make the decision by middle school or earlier. Those planning on four-year schools make the decision sooner than those going to community or technical schools. Kentucky students also are less likely than their U.S. counterparts to say they are going to college to train for a specific career.

• Family, friends, and their own deliberations have more influence on youth educational choices than do school personnel such as teachers and counselors.

• Students spend most of their out-of-school time working for pay, socializing with their friends, engaging in sports or hobbies, and relaxing with their families. They devote only about five hours per week to homework—about the same amount of time they spend on the phone.

• Students know very little about ways to finance college. With the exception of the Kentucky Educational Excellence Scholarship, only a small number regard themselves as very familiar with any of the state and federal financial aid programs, and large percentages regard themselves as not at all familiar.

• Some of the best academically prepared students are planning to attend college out of the state.

Observations and Recommendations

In general, the survey results foster optimism, at least with regard to college-bound youth in the Commonwealth. The students responding to the survey seem to be doing well academically and to compare favorably with their peers in other states. Since most of the students who responded to the survey are planning on

more education, the picture for those who are not is less clear. This is an important group, because it is the very population the state needs to tap into if it is to meet its goal of boosting postsecondary attendance. Also of some concern is the notion that most of the students planning on additional education do so for expected economic benefits, perhaps shortchanging some of the other substantial arguments for higher education. Furthermore, even the most gifted students do not seem to devote much time to academic matters. Finally, it appears that the state's investment in technology has paid dividends. Students learn how to use computers in school, and that has important implications for closing what has been dubbed the digital divide.

Given the survey results, we suggest policymakers consider the following:

- Alter the discourse on education to include benefits beyond the economic. Empirical data show a connection between education and income. But it is not an unalterable law, and the emphasis on the economic benefits may be setting some students up for disappointment, undercutting their willingness to take courses that may be academically enriching but not necessarily economically beneficial. It may also discourage the pursuit of relatively less remunerative careers in such fields as teaching or public service.

- Develop new mechanisms to encourage enrollment in postsecondary education and target these toward those who traditionally do not pursue education beyond high school. Particularly urgent is the need for mechanisms to focus on these students early, not later than middle school and possibly grade school. State leaders should also reduce barriers to the participation of high school students, particularly those from disadvantaged backgrounds, in introductory level postsecondary courses. Such participation would familiarize them with higher education, enrich their high school experience, and possibly encourage them to continue their education.

- Sponsor additional research into the fate of the good students who leave the state for college and the ones who come here from elsewhere. Do they come back or remain in Kentucky or go elsewhere? Further examine the role of the guidance counselors, who barely register as influences on student education and career decisions.

- Sponsor another, more representative survey that plumbs the attitudes of those who do not plan to pursue their education beyond high school. This group is crucial to the state's goal of increasing the number of Kentuckians in postsecondary education, and greater insight into their attitudes and reasoning would offer policymakers an important vantage point as they craft the policies and programs to accomplish their goal.

The desire to boost the number of Kentucky's citizens who go on to pursue postsecondary education after high school is both laudable and shrewd public policy. But it will not just happen, and the policies and programs that have worked

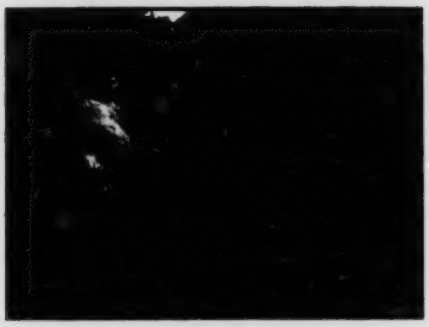
before may not be the best ones for today. Additional research and continued commitment on the part of Kentucky's leaders will be required to achieve this worthy but difficult goal.

ACKNOWLEDGMENTS

We would like to thank our partners at the Kentucky Long-Term Policy Research Center for various contributions. Michal Smith-Mello played the lead role in crafting and designing the survey instrument, and both Michal and Michael Childress, the Center's Executive Director, provided helpful commentary on an initial draft. Michal, Billie Sebastian, and Suzanne King provided their expert proofreading, layout and design contributions, and editorial support. Billie and Mark Schirmer will make the report widely available on the Center's web page.

We would also like to thank Ron Langley with the University of Kentucky Survey Research Center for help in designing and administering the survey. Jerry Sollinger wrote the executive summary and provided much valued proofreading and editing. Ellen Raine with the Legislative Research Commission also provided an important last-minute proofreading of the text that improved its quality.

Patrick Kelly with the Council on Postsecondary Education and Lee Nimocks with the Association of Independent Kentucky Colleges and Universities (AIKCU) assisted us greatly by providing data for the report. Also, Gary Cox, the President of AIKCU, provided a valuable review of an earlier draft of this report. Finally, while many individuals contributed to the content and structure of this report, the authors assume full responsibility for its content.



A New Path for Postsecondary Education

Introduction: An Era of New Education Goals for Kentucky

During the past decade, Kentucky policymakers have set ambitious achievement goals for the Commonwealth's education system to meet. The state has gained national prominence since 1990 when the legislature passed the Kentucky Education Reform Act (KERA) aimed at rejuvenating its elementary and secondary school system. Created after years of wrangling over deficiencies in elementary and secondary education and in the wake of a lawsuit declaring the state's entire public school system unconstitutional, KERA broke dramatically with Kentucky's education past. The reform measure increased school funding by about $400 million per year and distributed these resources more equitably among school districts. KERA also revamped school governance mechanisms, set lofty achievement targets for students, and launched an unusual accountability approach to pressure schools to improve.[1]

Though many questions remain regarding the effects of KERA's implementation on the state's schools, Kentucky policymakers have held firm to this reform approach, making only minor adjustments in the original legislation. Around the tenth anniversary of KERA's passage, both the Prichard Committee for Excellence in Education and the Kentucky Department of Education (KDE) published reports that claimed the reform had resulted in at least modest benefits for stu-

[1] The most complete accounts of KERA implementation struggles are found in Jack Foster, *Redesigning Public Education: The Kentucky Experience* (Lexington, KY: Diversified Services, 1999), and Roger Pankratz and Joe Petrosko, eds., *All Children Can Learn* (San Francisco, CA: Jossey-Bass, 2000).

dents.[2] Though debate about the academic and social effects of KERA will likely continue, the reform era has shown that Kentucky lawmakers and the state's political leadership are supporting public school teachers, administrators, and parents in their struggles to help children perform better.[3]

More recently, Kentucky's General Assembly turned its attention to higher education improvement, an issue that had become a chief agenda item for Governor Paul Patton, who won office in 1995. In the spring of 1997 and at Patton's behest, the legislature passed House Bill 1 (HB 1), a measure that reformulated Kentucky's postsecondary education system and committed the Commonwealth to spend dramatically more funds on this enterprise. The state's community colleges, which had been part of the University of Kentucky (UK), were separated from that institution (with the exception of the Lexington Community College) and joined with the technical colleges to form the Kentucky Community and Technical College System. The legislation provided resources to help the University of Kentucky work toward becoming a "Top 20" national research university.

HB 1 also envisioned the University of Louisville (U of L) becoming a major metropolitan university, and it provided incentive funds with which Kentucky's regional universities could significantly enhance specific academic programs and departments. The legislation authorized creation of a "virtual" university, to provide Internet-based higher education opportunities to students who did not have easy access to colleges or universities. Supervising this revised system would be a Council on Postsecondary Education, which would have more comprehensive governance authority than the previous oversight body. The Council would be the referee for the changes made and would work to help reduce the political jockeying for state funds that had traditionally taken place among these institutions and had arguably fragmented and weakened higher education in Kentucky. These changes would result, HB 1 proponents averred, in the transformation over roughly two decades of a mediocre public postsecondary education infrastructure into one of the best systems in the South.

Kentucky's General Assembly has kept its fiscal commitment to higher education reform, even when revenues have been limited. Indeed, since HB 1 became law in 1997, state support for postsecondary education has increased 45 percent, to about $1.1 billion per year. In addition to general fund support, Kentucky has also provided an additional $230 million in a "Bucks for Brains" program. These are substantial investments for a state that has many demands placed on its budget.

Hence, in less than a decade, Kentucky's political leadership substantially raised the bar for the state in terms of educational expectations at all levels. The state's public schools would be prompted by KERA's accountability mechanisms

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[2] The Prichard Committee, an education advocacy group that has long supported school improvement in Kentucky, issued its report, *Gaining Ground*, in 1999; it is available at: www.prichardcommittee.org. The Kentucky Department of Education (KDE) report, *Results Matter: A Decade of Difference in Kentucky's Public Schools 1990-2000*, is available at: www.kde.state.ky.us/comm/commrel/10th_anniversary/.

[3] The Prichard Committee and KDE tenth anniversary reports both make this point.

to increase educational achievement to ever-higher numbers of students. And Kentucky's postsecondary institutions—the two large universities, the six regional universities, the many community colleges and technical colleges, and the 19 private colleges (which together enroll about 20 percent of the state's 4-year college students)—would be expected to distinguish themselves in terms of their niches within the higher education edifice, and to educate greater percentages of traditional and nontraditional students than ever before. Amidst the national education reform fervor in the United States since the recession of the early 1980s, these ambitions seem unexceptional. Yet they are momentous indeed when considered against the backdrop of social conditions within the Commonwealth, as well as the state's minimal support for formal education before the 1950s.

The basic socioeconomic conditions in the Commonwealth are worth noting at the outset. A small, largely rural, upper-tier southern state, only 14 percent of the state's adults possessed a bachelor's degree as recently as 1990. By 2000, circumstances had improved somewhat, as the estimated percentage of the population over 25 years of age with at least a bachelor's degree rose to 17.2 percent, but remained well behind the national average of 25.1 percent and continued to rank near the bottom (48th) nationally.[4] Approximately one fifth of the state's children live below the poverty line, although the percentage is drastically higher in some of the state's poorest counties, which are among the most impoverished areas in the nation. And estimates of the numbers of Kentuckians who struggle with literacy problems are high: according to a 1997 survey, about 40 percent of citizens, ages 16-64, functioned at the two lowest literacy levels.[5] Though the state has made much progress in recent years—many of the high school dropouts in Kentucky are among the older members of the population, and students in past decades have graduated high school at rates close to the national average—Kentucky has a serious legacy of educational malnourishment to overcome.

That state leaders have undertaken recent measures to overcome this deficiency is evidence of their growing awareness of the economic consequences of an undereducated populace. During earlier portions of the last century, the state's economy relied heavily upon industries that did not require significant levels of formal education—agriculture (particularly tobacco), manufacturing, and coal mining. In recent decades Kentucky has made much progress in modernizing and diversifying its economic base. Manufacturing is still a cornerstone of the Commonwealth; the state ranks high among southern states and the nation in producing coal, food products, apparel, wood products, chemicals, automobiles and parts, and industrial equipment. But Kentucky has also seen expansion of services, transportation, and technology-driven industries. Though the state has added many jobs in higher-paying, higher-skill sectors, business and political leaders still rec-

[4] U.S. Bureau of the Census, www.census.gov, 7 Sept. 2001.

[5] Kentucky Council on Postsecondary Education, "Adult Literacy in Kentucky," *Spotlight on Postsecondary Education* 1:2, 2000.

ognize how far Kentucky has to go.[6] These leaders look with envy upon the success of other areas in the Southeast, such as the Research Triangle region of North Carolina or the Atlanta metropolitan region in Georgia. Kentucky policymakers have stated repeatedly that the state's ability to compete economically in the national and international arenas will depend upon a better educated, more professionally and intellectually agile population. This argument has been stated and recapitulated many times to support education reform efforts such as those embarked upon during the 1990s.

THE POSTSECONDARY ASPIRATIONS PROJECT

Since HB 1 was passed in 1997, the state's reformulated Council on Postsecondary Education has been charged with the task of developing programs and initiatives to implement that legislation. In this task, the Council has been led by a President with two decades of experience supervising Virginia's higher education governance system. One of the more noteworthy goals set by the Council is to increase the postsecondary attendance levels of Kentuckians over the next 20 years by roughly 50 percent, from some 161,000 students enrolled to about 240,000. This is the enrollment expansion the Council calculates will be necessary to bring Kentucky's postsecondary attendance levels to the national average.

Moreover, students will need to finish degree or certificate programs in a timely fashion, else the higher attendance figures will fail to yield the desired effects. This increase, incidentally, will likely have to come during a period in which demographers predict the overall population of the state will grow very little, a finding which apparently formed the basis for a recent Educational Testing Service projection that Kentucky will see *no* postsecondary enrollment growth through the year 2015.[7] Nor can this goal likely be met by increasing dramatically the percentage of high school students who matriculate in postsecondary institutions—quite simply, there are not enough high school graduates each year to raise enrollment by 50 percent. Hence, nontraditional students will have to account for a significant portion of postsecondary enrollments.

How will the Commonwealth achieve this extraordinary enrollment goal and what are the likely constraints Kentucky educational institutions will face in expanding student participation, especially among high school students? These questions, and particularly those involving the state's high school students and their plans for and knowledge about higher education, are at the fore of the postsecondary aspirations project, which has been conducted jointly by the Kentucky

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[6] For a recent statistical overview of Kentucky's economic conditions, see "Invented Here: Towards an Innovation-Driven Economy," by the Southern Growth Policies Board (state profiles available through the Board's website: www.southern.org), as well as the annual reports of UK's Center for Business and Economic Research (http://gatton.uky.edu/CBER/cber.htm).

[7] Anthony P. Carnevale and Richard A. Fry, *Crossing the Great Divide: Can We Achieve Equity When Generation Y Goes to College?* (Princeton, NJ: Educational Testing Service, 2000) 65.

Long-Term Policy Research Center and the University of Kentucky's Policy Analysis Center for Kentucky Education (PACKE). In an effort to learn more about what Kentucky high school students think about the pursuit of learning opportunities after high school, and how they are investing their time in anticipation of possible postsecondary attendance, these entities jointly created a student survey during the spring of 2000. During the spring and summer of 2000, the survey was administered to a large sample of Kentucky 16- and 17-year-olds by the University of Kentucky Survey Research Center (UKSRC). By that fall, nearly 1,100 survey responses had been returned to UKSRC, and we have extensively analyzed these data.

PURPOSE AND ORGANIZATION OF THIS DOCUMENT

Accordingly, the pages that follow represent our report on the survey results. But our intention is not simply to discuss the survey findings. Rather, we intend to place Kentucky's postsecondary growth plans into a broader social and historical context, so that readers can appreciate the nature of the educational task to which state leaders have called them. To accomplish this, we will devote the latter half of this section to some information about the growth of postsecondary education in Kentucky over the past century, so as to examine the precedents for the enrollment projections the Council has called for. We devote a second section of this report to a more detailed look at the social and educational background of Kentucky's youth, against the backdrop of research evidence about who goes to—and who succeeds in—college in the United States. In the third section, we turn to the survey results themselves and our interpretation of the findings. Finally, we conclude with our reflections on the quest to better educate an ever larger number of Kentuckians and the policy changes that might be necessary to accomplish state leaders' goals.

THE BIGGER PICTURE: 100 YEARS OF POSTSECONDARY ENROLLMENT GROWTH IN KENTUCKY

The outset of this report is a fitting place to consider the overall higher education picture in Kentucky because postsecondary learning has expanded during the previous century. This, after all, is the setting in which the Council's aggressive postsecondary enrollment growth campaign will take place. The initial historical point to note is that during the first half of the 20th century only miniscule percentages of Kentuckians pursued higher education to begin with, and the state invested relatively few resources in postsecondary schooling. Indeed, as the last century dawned, Kentucky's postsecondary infrastructure consisted primarily of State College, the Agricultural and Mechanical land-grant school in Lexington

that later became UK. As a former state historian once noted, in 1904 the Commonwealth contributed $36,380 to support State College, this in a year when the city of Louisville spent more than this amount on Male High School alone, and when the state of Wisconsin provided $471,500 to its flagship university.[8] Kentucky had no regional colleges or universities of its own, although it did support the small State Normal and Industrial Institute in Frankfort, a training institution for Kentucky's African-American population. Louisville had a collection of medical colleges and a law school that eventually coalesced into the University of Louisville, but these institutions were supported locally, not by the Commonwealth. Hence, higher education at this point in Kentucky history was almost entirely the domain of small, private institutions. And given that most state legislators had attended private colleges inside or outside of Kentucky and that members of the business elite often sent their children to northeastern colleges or Ivy League schools, there was relatively little support for expanding the state role in higher education.

As the century progressed, however, Kentucky's General Assembly began in earnest to build a higher education system. In 1906, the legislature established normal schools in Richmond and Bowling Green that eventually became Eastern Kentucky University and Western Kentucky University, a feat which it repeated in 1922 to create the institutions that became Morehead State University and Murray State University. In 1908, State College became UK, after which financial support from the General Assembly and other sources began to grow substantially.[9] As Table 1 shows, by 1930, as the Depression era began, Kentucky universities were educating approximately 9,000 students annually. Enrollments suffered severely during the 1930s, when family resources were scarce and state budgets were hammered by dismal national economic conditions. But by mid-century, state institutions had rebounded and were educating nearly as many students as were the state's private colleges.

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[8] James C. Klotter, *Kentucky: Portrait in Paradox, 1900-1950.* (Frankfort, KY: Kentucky Historical Society, 1996) 164.

[9] Frank McVey, University of Kentucky president from 1917 to 1940, noted that UK's student body increased from 1,204 students in 1917 to 6,242 in 1945, its library holdings expanded from 22,000 to 367,000 during the same period, and its physical plant went from 11 academic buildings to 42 buildings. See McVey, *The Gates Open Slowly: A History of Education in Kentucky* (Lexington, KY: University of Kentucky Press, 1949) 123.

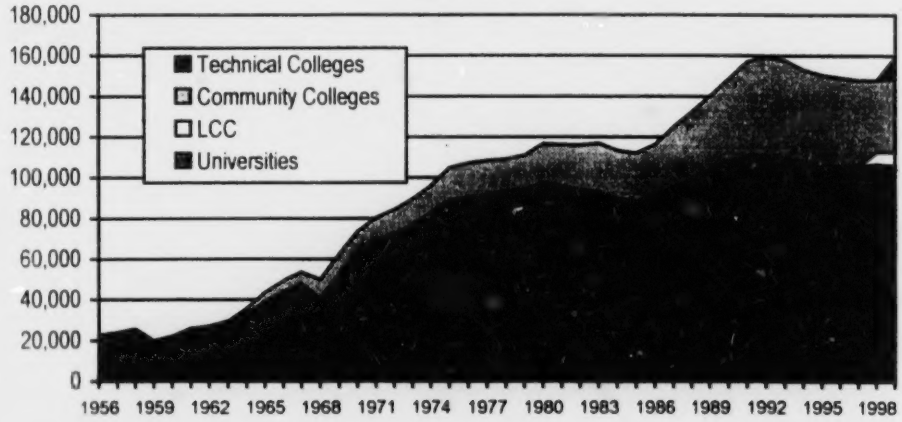
TABLE 1
Enrollments in State-Supported Postsecondary Institutions in Kentucky, 1930-1950

	1930	1940	1950
University of Kentucky	3,245	4,202	8,476
Western	2,739	1,854	1,833
Eastern	1,179	1,541	1,861
Murray	902	1,294	1,665
Morehead	846	931	824
Kentucky State	138	682	716
Totals	9,049	10,504	15,375

Source: Klotter, Table 6.2, p. 166, Portrait in Paradox

From the latter 1950s onward through the early 1990s, the higher education landscape in Kentucky—and most other states—began to shift dramatically as postsecondary enrollments exploded during segments of that period. As the chart below shows (see Figure 1), beginning in 1956, Kentucky's state universities enrolled a total of about 22,000 students. This was approximately the number of students in the state's private colleges at the time—and there were fewer than 1,000 students in community colleges. Just one decade later, state university enrollment had nearly doubled, and community college enrollment numbered nearly 5,500, a reflection of the fact that these new institutions were being built in strategic locations across the state. After another decade and a half, by about 1980, state university enrollment had more than doubled again, and community college participation had soared to nearly 20,000 students.

FIGURE 1
Enrollment in Kentucky Public Postsecondary Institutions, 1956-1999

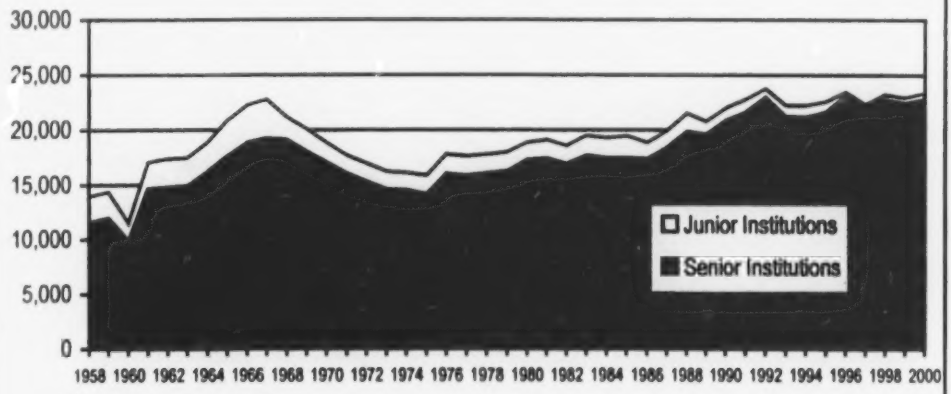


Source: Kentucky Council of Postsecondary Education

Hence, in overall terms, Kentucky postsecondary enrollment increased by more than 100 percent between 1956 and 1966 and by an additional 110 percent or so between 1966 and 1980. Enrollment dropped off somewhat after 1980, presumably in response to several factors, including changes in federal student aid policies and practices and double-digit tuition inflation at many colleges and universities for much of the decade. By the latter 1980s, however, public sector enrollments picked up again to peak in the early 1990s, after which they tapered off somewhat to around 150,000 students. Note that the system picked up an additional 10,000 or so students in the late 1990s as technical college students came to be added to the count and as LCC students were counted separately from those at other community colleges.

Enrollment trends over this same period at Kentucky's independent institutions differ and reflect the difficult financial realities private sector colleges and universities must face as well as the increasing competition posed by the explosive enrollment growth among public sector institutions. As Figure 2 shows, private college enrollment in Kentucky increased about 60 percent between 1958 and 1966. But enrollment declined over roughly the next decade, then held steady at around 19,000 total students during the 1980s, then rose in the early 1990s and remained around 23,000 students during that decade. It is noteworthy that over one half dozen private colleges have either closed or merged with others during this period of burgeoning public university enrollments. Given that Kentucky has never supported these schools directly, it is remarkable that private colleges have fared as well as they have. It seems likely that they will continue to educate approximately one fifth of the state's four-year postsecondary students. Note in Figure 2, as well, the near disappearance over four decades of the two-year private colleges in the state. Presumably the public community colleges and the state's public and private four-year institutions have absorbed the students who once attended independent "junior colleges."

FIGURE 2
Private College Enrollments in Kentucky, 1958-1998



Source AIKCU (from Caspar Enrollment Database)

One further enrollment topic worth considering involves minority students. During the many decades of segregation practices in Kentucky, the state's minorities—the vast majority of whom have been African Americans—were obliged to leave the state for higher education or to attend Kentucky State, the lone historically black college within Kentucky's borders. Though these practices formally ended about four decades ago, the state has struggled during much of that time to boost African-American student enrollment, retention, and graduation. During the early 1980s, Commonwealth leaders launched "The Kentucky Plan" to increase minority student postsecondary involvement and success rates. As of the mid-1990s, Kentucky had succeeded in sending her African-American students to postsecondary institutions at roughly the same rate as the white population; approximately 10 percent of Kentucky high school students are minority group members and about 60 percent of high school graduates—whites and African Americans—pursue some form of postsecondary schooling. However, retention rates among minority students have been lower than among whites, and the overall college completion rates of African Americans in Kentucky still lag considerably behind that of whites. In addition, the state has been unable to reach its goals in terms of minority hiring at colleges and universities for faculty, administrative, and staff positions, although the state has made some progress on these various employment fronts. Minority student issues and Kentucky Plan implementation continue to be monitored by the state's Committee on Equal Opportunities, which is appointed by the Council and periodically provides reports on the state's progress in this area.[10]

[10] For a description of the current version of the Kentucky Plan, see "The 1997-2002 Kentucky Plan for Equal Opportunities in Higher Education," Committee on Equal Opportunities, which is available at

From a longer historical perspective, then, it appears that the Council's goal of a 50-percent increase in postsecondary enrollment is neither unreasonable nor unprecedented. On the other hand, the enrollment increases Kentucky experienced during the period roughly mirrored enrollment expansion levels elsewhere. From 1966 to 1980, for example, national higher education enrollment rose from 6.4 million students to 12.1 million, a rough doubling of the numbers.[11] Not surprisingly, total higher education revenues rose dramatically during this same period, from $7.4 billion nationally in 1965-66 to $42.2 billion in 1980-81.[12] What accounts for this stunning growth in postsecondary enrollments in Kentucky and across the nation? A 1966 report issued in the midst of this vigorous growth period by a Kentucky higher education study team appointed by Governor Ned Breathitt cites a range of reasons for the increasing emphasis on education at the time. First, notes the report, the United States had by that point truly become a science-oriented society, and the signposts of science were everywhere, from the space program to airplanes to medical research breakthroughs. At the same time, the economy was shifting from manufacturing jobs to service and professional opportunities, and many citizens understood that thriving under these new conditions would require higher education. In addition, advances in communication capabilities, changes in value commitments toward civil rights and personal betterment, and a growing knowledge base in most arenas of life also contributed to interest in higher education. In short, the study concluded, vastly increasing numbers of individuals during this period saw higher education as a key to self-sufficiency and to opportunity in the shifting economic structure of the nation. This fact, combined with substantial population growth at the time plus the expansion of postsecondary opportunities through community colleges and expanding capacity at state universities, fueled the attendance growth of this roughly 30-year period.[13]

Numerous other factors doubtless played a part in this dramatic higher education expansion as well. In the decades after World War II ended, the American middle class began to grow, which enabled families that had hitherto been unable to afford to send children to college to do so. During the 1950s and 1960s as well, virtually every state in the nation dramatically expanded the number of campuses available to students, which facilitated enrollment increases. By the late 1960s, the federal government had gotten involved in higher education finance by launching the grant and loan mechanisms that were the precursors of today's Pell Grant and Stafford Loan programs. Following the federal government's lead, by the 1980s, many state governments began creating their own tuition subsidy programs to

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the Council on Postsecondary Education website: www.cpe.state.ky.us under the heading "Equal Opportunities."

[11] Cecilia A. Ottinger, American Council on Education, *1984-85 Fact Book on Higher Education* (New York: MacMillan Publishing Company, 1984) 56.

[12] Ottinger 46.

[13] Survey Team for the Long-Range Study of Higher Education in Kentucky, *Higher Education in Kentucky 1965-1975: A Program of Growth and Development* (Frankfort, KY: Kentucky Commission on Higher Education, 1966).

enable academically qualified students to attend postsecondary schooling. In Kentucky, the Kentucky Higher Education Assistance Authority emerged to help coordinate these programs. And in the 1990s, states began experimenting with large-scale merit-based award systems, the most noteworthy example being Georgia's lottery-funded HOPE scholarship program, which promises free tuition at state universities to high school students who earn a certain minimum grade point average. In 1998, Kentucky created the Kentucky Excellence in Education Scholarship (KEES) to serve basically the same purpose.

Hence, for several of the decades when postsecondary enrollments were growing explosively, various federal and state policies to expand public higher education and to make postsecondary learning affordable were put into place. However, this postsecondary policy structure has been in place for some time now, and enrollments have been roughly level for at least a decade. The most recent programs, such as Georgia's HOPE Scholarship, appear to be having important effects. Recent analyses of HOPE suggest that it helps keep academically talented students from going outside the state for college, and modestly boosts college enrollment of 18- and 19-year-olds (by 7 to 8 percent). Such programs may therefore be desirable, but they should not be expected to increase substantially overall postsecondary enrollment in a state.[14] The challenge for Kentucky institutions will be to meet their enrollment goals during an era when higher education is *not* growing dramatically elsewhere in the nation.

Such is the present status of Kentucky's postsecondary enrollment situation. Both the state and the nation saw massive expansion between the late 1950s and the early 1990s, although enrollments have been fairly level since then and have in some cases fallen during the latter 1990s. Institutional and individual student aid programs have been established during these decades to provide financial assistance to families. These programs have helped increase enrollment to current levels, although they have been unable to increase enrollments significantly beyond what they have been roughly over the past decade. In Kentucky, some four out of five college students pursue higher education in public institutions, whereas the remaining 20 percent attend private colleges. What socioeconomic factors seem to most directly affect postsecondary participation, and what do Kentucky youth currently think about their postsecondary school future? The remaining sections of this report take up these and other questions about higher education in Kentucky in the coming decades.

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[14] These are among the conclusions of two studies: Christopher Cornwell, David Mustard, and Deepa Sridhar, "The Enrollment Effects of Merit-Based Financial Aid: Evidence from Georgia's HOPE Scholarship." The paper is available at: www.terry.uga.economics/paperlst.html. See also Susan Dynarski, "Hope for Whom? Financial Aid for the Middle Class and Its Impact on College Attendance," *National Tax Journal* 53.3 (2000): 629.

THE CHALLENGES OF EDUCATIONAL MALNUTRITION

KENTUCKY PLAYS "CATCH UP" IN EDUCATING ITS CITIZENRY

As noted in the previous section, a succession of Kentucky governors, General Assemblies, and policy and political leaders during the 1990s passed important education legislation. These laws, among other things, increased funding for education in the Commonwealth and also created new policy mechanisms for helping teachers, principals, superintendents, professors, and college administrators more effectively educate the state's students. Kentucky voters and taxpayers have presumably agreed to fund these expenditure increases to help counteract the educational deficits compiled in the Commonwealth during the past century, when state policies, budgets, and commitments were insufficient to enable her citizens to keep up with the education levels of neighboring states, and a bias against formal schooling was palpable in some sectors of the state's population.

Indeed, as James Klotter argued in one of his recent historical works, at the turn of the 20th century, Kentucky's elementary school system was more well developed than its counterparts elsewhere in the southeast. By mid-century, however, the Commonwealth had slipped behind numerous other states in the region in education expenditures, school attendance, graduation levels, and the like.[15] Since then the state has played catch up in terms of schooling, and although its governors—from Bert Combs through Paul Patton—have launched many initiatives to improve education, other states and the nation have also striven to develop a better-educated populace. Hence, though Kentucky has recently made important learning gains and her best students attend the most prestigious colleges and universities in the nation, the state still faces an uphill battle in terms of aggregate education statistics. As a result, Kentuckians are used to hearing the Common-

[15] Klotter 147.

wealth ranked among the least accomplished states in terms of key education indicators. As previously noted, Kentucky continues to rank near the bottom in terms of the percentage of its population with a high school degree or its equivalent (49th) and the percentage of the adult population with a four-year college degree or better (48th).[16]

TABLE 2
Educational Progress in Kentucky, 1980-2000

	Adults 25 and older having completed a high school degree or its equivalent	Adults 25 and older with a bachelor's degree or more
Kentucky		
1980	59%	11%
1990	68	14
2000	75	17
United States		
1980	70%	15%
1990	77	20
2000	82	25

Source: U.S. Bureau of the Census reports for 1980, 1990, and Census 2000 Supplemental Survey

A closer look at statistics reveals the steady progress the Commonwealth has made in educating its citizenry. Table 2 shows key education indicators at ten-year intervals from 1980 to 2000. As is evident, in just the past two decades, Kentucky has cut nearly in half the percentage of its adult population 25 and older with less than a high school degree. At the same time, the number of Kentuckians who fail to finish high school has fallen from four in ten adults to two in ten. The percentage of the state's adult population with a bachelor's degree or more has also risen steadily but not to the extent that the U.S. portion has. Still, the proportion of Kentuckians with a college degree increased from about one in ten adults in 1980 to nearly one in five in 2000. Some of the statistical improvement we have seen resulted from the death of many older citizens who never completed formal education beyond grade school, but much stems from the policies and programs enacted in recent decades.

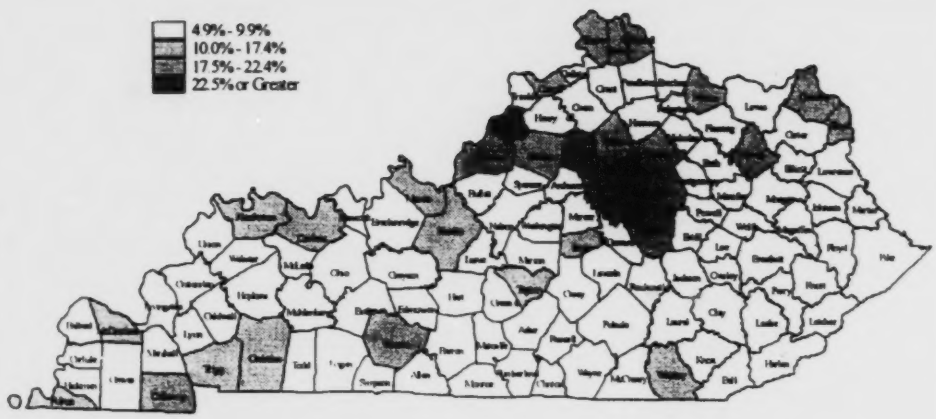
Improvement in the state's educational status has occurred in spite of countervailing demographic trends. At least in part, Kentucky's educational status has not advanced because the state is home to an extraordinarily high native population, the nation's second highest in 1990, and a large and aging population, among whom undereducation is commonplace. At the same time, longevity has steadily increased, and parts of rural Kentucky have become magnets for returning retirees with no postsecondary-education experience. Because Kentuckians tend to be less mobile and more inclined to "age in place," undereducation remains a stubborn

[16] Census 2000 Supplementary Survey Profile for United States, Kentucky, and other states, "Table 2. Profile of Selected Social Characteristics," 2001, U.S. Bureau of the Census, 21 Sept. 2001 <www.census.gov/c2ss/www/Products/Profiles/2000/Tabular/C2SSTable2/01000US.htm>.

characteristic of the general population. Moreover, a national trend towards higher education rates has negated gains relative to other states.

Greater scrutiny of other statistics reveals both the strengths and weaknesses of recent education progress. The most important point that emerges from the statistics is the unequal distribution of education across the state. In a nutshell, the metropolitan areas of the state, and particularly the Lexington-Louisville-Covington region, have a relatively well-educated populace, whereas the rural areas of the state, especially the eastern and southcentral parts of Kentucky, still have an undereducated populace. One particular data map (Figure 3) of the Commonwealth aptly illustrates this point. Based on 1990 census results, it shows the percentage of adults 25 and older with a college degree by county.[17]

FIGURE 3
Percent of Adults with a Bachelor's Degree or Higher, Ages 25 and Older, Kentucky, 1990



Source: 1990 U.S. Census

The highest degree-attainment rates are in Fayette and Oldham Counties, the latter of which is a suburban community where many professionals who work in Louisville live. The next highest rates are in the collar counties around Fayette in the central part of the state, along with Jefferson County (Louisville) and the counties bordering Cincinnati in the north. Other counties with higher attainment levels include those in which institutions of higher education are located: Calloway (Murray State University), Warren (Western Kentucky University), and Madison (Eastern Kentucky University). Outside of these areas, postsecondary degree attainment rates are considerably lower.

Another informative data map was generated as part of a 1997 adult education study of literacy in the Commonwealth (Figure 4). Indeed, Kentucky has long

[17] The following counties are between 10 and 17.4 percent: Boone, Bourbon, Boyd, Boyle, Campbell, Carroll, Christian, Clark, Daviess, Fulton, Greenup, Hardin, Henderson, Kenton, Mason, McCracken, Meade, Rowan, Scott, Shelby, Taylor, Trigg, and Whitley. The counties between 17.5 and 22.4 percent include: Calloway, Franklin, Jefferson, Jessamine, Madison, Warren, and Woodford.

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fought appallingly high levels of illiteracy across the state, and though illiteracy has receded, the battle still rages. According to the 1997 survey, some 340,000 Kentuckians between ages 16 and 64 function at the lowest level of literacy, (Level 1 on a 5-point scale), while another 656,000 citizens in the same age group function at Level 2. In other words, around a million working-age individuals in the Commonwealth are either illiterate or have difficulty reading newspapers, job advertisements, or application forms. It will likely be hard for these Kentuckians to thrive economically in the information-age economy. The data map shows the distribution of literacy levels across the state, which tracks closely with the previous information about education levels. As the map shows, the highest literacy levels are in the counties clustered around urban-triangle cities, as well as in the western part of the state. Alternatively, the lowest levels are spread across the more rural counties outside of the urban-triangle area and concentrated in the eastern part of the state. [18]

FIGURE 4

Percent of Kentuckians, Ages 16-64, at Two Lowest Levels of Literacy, by County, 1997

Source: University of Kentucky Survey Research Center

Not surprisingly, there is a strong correlation between the counties with the lowest literacy rates and numerous other indicators of social and economic problems. These counties have the highest rates of high school noncompletion and lowest rates of college degree possession. According to a recent Council analysis, counties with the highest literacy levels have the highest per capita income, whereas those with the lowest literacy levels have the lowest per capita income. There is also a strong relationship between literacy levels and unemployment

[18] Though these are the illiteracy figures cited widely by experts inside and outside of Kentucky, we would note that disagreement exists about the nature and extent of this problem. See, for example, the revisionist position of Andrew Kolstad, in Jay Mathews, "Millions of Adults Illiterate No More," *Washington Post*, July 17, 2001.

rates. Again, and as one would intuitively expect, counties with the lowest literacy levels tend to have the highest unemployment and vice versa.[19] It is unclear, of course, whether the low literacy levels of these rural areas of Kentucky *cause* low per capita income and high unemployment rates, whether lack of economic opportunities in those places lead to low income and high unemployment levels and indirectly foster illiteracy, or whether other factors affect income, education, literacy, and economic development levels. As social scientists have long argued, the fact that there is a correlation between higher education levels and higher economic returns—long demonstrable empirically[20]—does not mean that increasing postsecondary attendance rates in an area will always cause income levels to rise. However, to reiterate our point, low education and literacy levels are unequally distributed across Kentucky in such a way that the urban triangle and western portions of the state benefit economically while rural areas tend to suffer.

In sum, Kentucky's record in recent decades has been mixed. On the one hand, Kentucky has made palpable and important strides in educating its populace to levels possessed by those elsewhere in this country. In fact, in the urban-triangle metropolitan regions, education levels of the citizenry rival those of urban and suburban areas across the nation. While the educational and economic advances in these areas have been impressive, the gains have not been sufficient for Kentucky to overtake the national average. Moreover, significant areas in the state suffer from unusually high educational and economic deficits. Hence, from a "glass-half-empty" perspective, it is still true that at least four out of five adults in the Commonwealth do not possess a four-year college degree (the comparable figure nationally is three out of four adults). Furthermore, in many of the more rural areas of the state, the college-completion rate is much lower, high school noncompletion rates are considerably higher than the state and national averages, and adult literacy levels are much lower.

THE POTENTIAL EFFECTS OF EDUCATIONAL DEFICITS ON POSTSECONDARY EDUCATION

Such social statistics sound familiar to anyone knowledgeable about Kentucky's history, geography, and economic development. The question that looms large in the present context is, "How are these statistics important to the

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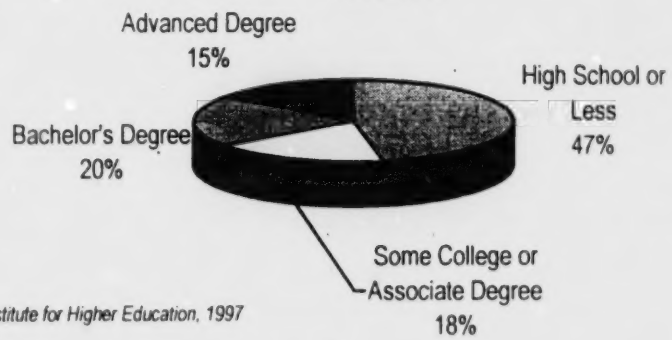
[19] Council on Postsecondary Education, "Adult Literacy in Kentucky." *Spotlight on Postsecondary Education*, Vol. 1, No. 2. According to the report, counties with 25 percent to 40 percent of 16-24-year-olds at the literacy levels 1 and 2 had per capita income of $23,400, while those with 49 percent to 60 percent at those same levels had per capita income of $14,300. Similarly, counties with 25 percent to 40 percent at levels 1 and 2 had unemployment levels of 4.3 percent, whereas those with 49 percent to 60 percent at those levels had unemployment of 7.9 percent. Counties in the middle, with 41 percent to 48 percent at levels 1 and 2, had per capita income levels and unemployment levels roughly halfway between these highs and lows.

[20] For recent analyses of the education-income linkage, see Economics and Statistics Administration, Bureau of the Census, Statistical Brief 94-17, U.S. Department of Commerce, Aug. 1994, and "How Much We Earn—Factors that Make a Difference," Statistical Brief 95-17 June 1995. See also Thomas G. Mortenson, "Educational Attainment by Family Income, 1970 to 1994," *Postsecondary Education Opportunity* 41 (1995).

future of Kentucky higher education?" From a policy perspective, one might argue that Kentucky's plans to invest additional resources in K-12 and higher education are the crucial factors, not the legacy of the past. From the standpoint of HB 1 and a concerted state initiative for dramatic expansion of postsecondary enrollment, however, such statistics are indeed vital, because when they are juxtaposed to research findings about postsecondary attendance patterns, they show the nature and extent of the learning challenge facing Kentucky and also provide hints about the types of policies and programs that might effectively counter this legacy of educational malnutrition.

Specifically, research on postsecondary enrollment trends shows several sources of distinct disadvantage for students in general: so-called first-generation status, welfare status, and single-parent home status. The term "first generation" refers to college students, or would-be students, who come from families where no adult attained a postsecondary education. According to an analysis of a national postsecondary student data set, it appears that as of about five years ago, 53 percent of college students nationally came from homes where parents had attended college, received a bachelor's degree, or received an advanced degree. The remaining 47 percent of students were thus "first-generation" students, whose parents had only attained a high school diploma or less. Comparable figures on Kentucky students are not available, but given the lower-than-average levels of postsecondary education among the state's adult population, it seems safe to assume that the percentage of first-generation students in Kentucky exceeds 50 percent—and is likely quite higher than this at many institutions around the state.

FIGURE 5
U.S. Enrollment in Postsecondary Education by Parents' Education, 1995-1996



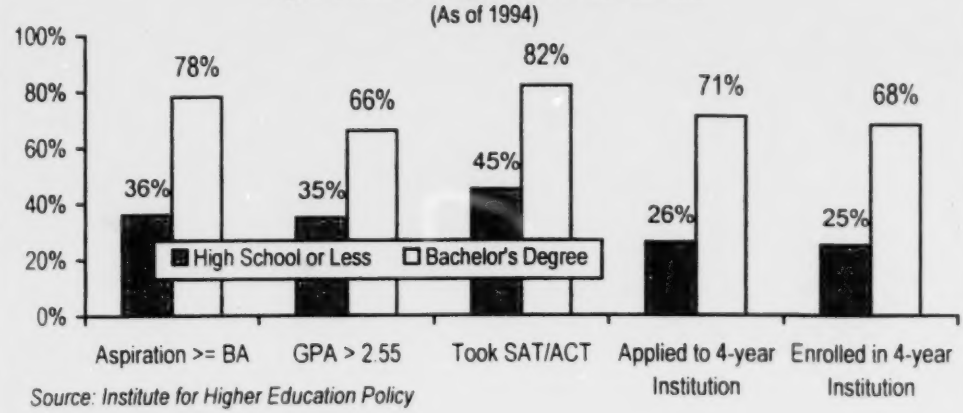
Source: Institute for Higher Education, 1997

While it is certainly admirable for students from noncollege families to aspire to postsecondary education—and these students must necessarily comprise a significant percentage of the postsecondary mix to reach the Council's enrollment goals—recent research on disadvantaged students nationwide shows the difficulties these first-generation students face in terms of reaching college. In one study, the authors examined the extent to which high school students typically take what

they term the "pipeline steps" necessary to enable them to reach a four-year college. The first step was for students to desire to attain at least a baccalaureate degree. Second, students needed to have earned a high school GPA of at least 2.55, which the study authors deemed the minimal level for college admission. The third step was to have taken a college admissions test, either the SAT or ACT. The fourth step was to have applied to a four-year institution, and the fifth step was to have actually enrolled in a four-year institution. No linked policies exist, of course, to encourage students to take these particular steps. Rather, these were simply the minimum actions the authors thought students needed to have taken to be able to fulfill a stated desire to achieve a college degree. The study included information on a national sample of students who were in eighth grade in 1988 and who answered a follow-up survey in 1994 about their educational activities.[21]

As can be seen in Figure 6, the results of the study's data analysis are striking. Clearly, first-generation students tend to take these pipeline steps at a substantially lower rate than do their second- or third-generation peers. First-generation students aspire to a bachelor's degree less than half as often as do students from families whose parents attended college. Far fewer of them have a GPA that would likely earn them entrance to a four-year college. They take college entrance exams much less frequently than do their peers. And they apply to and enroll in four-year colleges at a dramatically lower rate than do those from college-educated families. This does not mean, of course, that these students do not attend community or technical colleges at relatively high rates. But if one benchmark of postsecondary progress is increasing the percentage of Kentucky's population with a bachelor's degree or more, and if the state's higher-than-average proportion of first-generation students have low postsecondary education aspirations, then the state's education challenge becomes more stark.

FIGURE 6
Pipeline Steps Taken by 1988 Eighth Graders, by Parents' Education
(As of 1994)



Source: Institute for Higher Education Policy

[21] Education Resources Institute, "Missed Opportunities: A New Look at Disadvantaged College Aspirants." (Washington, D.C.: Institute for Higher Education Policy, 1997)

The most up-to-date analysis of national data on postsecondary enrollment trends was offered recently by the National Center for Education Statistics, as a special essay in its 2001 edition of the annual *Condition of Education*.[22] This report contains a host of information about the variations in postsecondary enrollment among students based on their social background characteristics, nearly all of which buttresses these general points regarding the difficulties facing disadvantaged students. For example, the data show that first-generation students tend not to take the most rigorous courses in high school, even though doing so is highly related to successful completion of a college degree. This is especially the case in terms of mathematics; indeed, it appears that disadvantaged students who take the most advanced math courses in high school greatly increase their chances of entering and finishing college. Also, students from disadvantaged families have generally lower postsecondary aspirations than their peers from more advantaged families and are less likely actually to enroll in a four-year institution.

The previously cited study that focused on the postsecondary difficulties facing first-generation college students also reviewed the impact on postsecondary attendance of recipients of welfare, given recent changes in that entitlement program, and on students who come from divorced families or single-parent (usually female-headed) households. The welfare issue stems from the reform of the federal Aid to Families with Dependent Children (AFDC) program in 1996, which was changed that year to the Temporary Assistance to Needy Families (TANF) program, to be operated via block grants to the states. The demographic profile of adult welfare recipients nationally as of 1995 was as follows: they were overwhelmingly single mothers (90 percent), tended to be minority group members (37 percent white, 36 percent black, and 20 percent Hispanic), and were disproportionately undereducated (42 percent did not have a high school diploma or its equivalent). To address the educational needs of this population, the previous AFDC program encouraged welfare participants to pursue GED and postsecondary training opportunities. The 1996 reforms, however, imposed new work requirements on TANF participants and also placed new restrictions on postsecondary participation. While solid national data or Kentucky state data are not available on welfare recipient postsecondary enrollment, data from selected sources do suggest that welfare reform has caused a significant drop-off in postsecondary attendance rates among members of this population.[23] Although this trend is not likely to have a huge impact on Kentucky institutions—welfare recipients make up less than 4 percent of the U.S. undergraduate population—its effects are likely to be felt most acutely at public community colleges, given that the majority (nearly 60 percent) of welfare participants attend these types of institutions.[24]

For children of divorce or of single-parent households, the study notes that the percentage of American children living in single- or divorced-parent households has risen from 4 percent in 1970 to around 10 percent in 1995. (Since this does not

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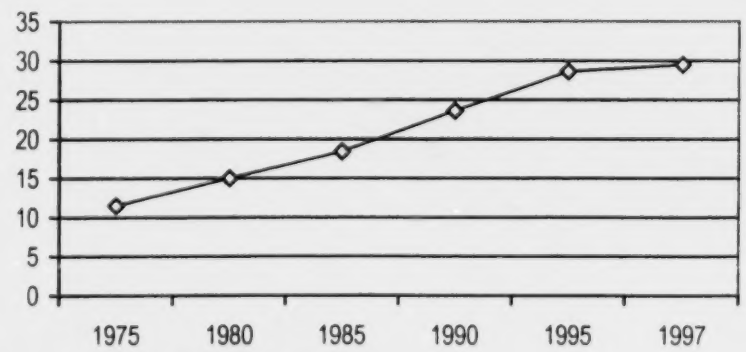
[22] Susan P. Choy, "Students Whose Parents Did Not Go to College: Postsecondary Access, Persistence, and Attainment," in *The Condition of Education 2001*, xvii-xliii. (Washington, D.C.: NCES, 2001).
[23] *Missed Opportunities* 16.
[24] *Missed Opportunities* 17.

include children of divorced parents who remarry, "...the proportion of children who have experienced divorce may be significantly higher.")[25] Children from such families, the report avers, will likely face greater difficulty affording postsecondary education, given the lower income levels of single-parent (mostly female-headed) households and the emotional toll that divorce often takes on children. Based on analysis of National Educational Longitudinal Study 1988 and 1994 data, it appears that children from divorced families take the five previously cited pipeline steps for college attendance proportionately less frequently than do their peers from married families: 30 percent from divorced homes failed to take any of the steps, compared with 20 percent from intact families, while 24 percent of children from divorced homes took all five steps, compared with 36 percent of those with married parents.[26] There is, quite naturally, an economic component to this problem. In 1991, nearly three fourths of those from divorced homes had family incomes of less than $35,000 per year, compared with only 39 percent of those from married parents.

The percentage of Kentucky children living in single-parent households will not be accurately estimated until after 2000 census data are examined. However, data compiled by the Kentucky State Data Center show a dramatic increase over the past 25 years in the percentage of children born in the Commonwealth to unmarried mothers. Statewide, and as shown in Figure 7, births to unmarried mothers rose from 11.5 percent of all births in 1975 to almost 30 percent by 1997.

FIGURE 7
Percent of Births to Nonmarried Mothers, Kentucky, 1975-1997



Source: Kentucky State Data Center

Even though the *number* of births in this category vary considerably from county to county and region to region within the state, the same trends, and roughly the same percentages, hold throughout most of the state. In addition, and as one familiar with social statistics might expect, the bulk of these births to un-

[25] *Missed Opportunities* 23.
[26] *Missed Opportunities* 24.

married women occur among those in the population who are youngest and have the least amount of formal education. In fact, of 5,122 births to 15- to 19-year-old women in Kentucky in 1998, some 3,566, or almost 70 percent, were to unmarried women with less than a high school degree. Similarly, in 1998 some 3,859 children were born to women with less than a high school degree, and 47.4 percent of this total, or 1,831 children, were born to unmarried mothers.[27] Though these data do not provide crucial information about the current social or familial situations of the children born to unmarried mothers—presumably many of these mothers marry after the birth of their child, or are cohabiting, or are living with parents or grandparents and are not strictly in a single-parent household—they nevertheless suggest a significant increase over time in the number of Kentucky children who do not have the economic, social, or educational benefits of living in a two-parent home. Inasmuch as living in a single-parent home represents a disadvantage to students in terms of possible postsecondary enrollment, Kentucky will likely face a larger problem over time in this regard rather than a smaller one.

ACADEMIC PERFORMANCE AMONG KENTUCKY STUDENTS

The legacy of educational underemphasis throughout Kentucky's history, which is captured by some of the previously cited statistics, also manifests itself through various academic achievement indicators. Though subsequent sections of this report provide greater detail on the academic achievement of students who responded to our survey, it is worth noting that in the aggregate, according to a recently released national report on the status of state postsecondary efforts, Kentucky students are lagging behind the top states in terms of scholastic performance. As Table 3 shows, a somewhat smaller percentage of Kentucky high school students take upper-level math and science courses—deemed necessary for college success—than do students in the cluster of states with the best averages in such courses. It is worth noting, though, that Kentucky students are not too far behind in these measures and that Commonwealth students have made dramatic progress in pre-collegiate courses taken over the past two decades. Where the state still lags, according to these data, is in the percentage of Kentucky eighth grade students who take algebra, a foundation course for a successful sequence of college-preparatory math.

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[27] Kentucky State Center for Health Statistics, *Kentucky: Annual Vital Statistics Report, 1988*, Table 1-B, "Resident Live Births by Age and Marital Status of Mother, by Race of Mother, 1998" (Frankfort: Cabinet for Health Services, 1998) 13.

TABLE 3
Academic Preparation for College, Kentucky and Leading States

K-12 Course Taking	Kentucky	Average of Top States*
9th to 12th graders taking at least one upper-level math course	50%	59%
9th to 12th graders taking at least one upper-level science course	34	37
8th grade students taking algebra	17	28

*Top States in this category include Alaska, Connecticut, Illinois, Massachusetts, Nebraska, New Jersey, Utah, and Wisconsin.
Source: The National Center for Pubic Policy and Higher Education, Measuring Up 2000: The State-by-State Report Card for Higher Education

Additional achievement data show starker differences between the proficiency levels of Kentucky students and those from the best-performing states. As shown in Table 4, Kentucky students who take Advanced Placement tests are relatively less likely to score high enough on these exams to exempt themselves from lower-level college courses. In addition, smaller percentages of Kentucky high school seniors score in the top 20 percent nationally of SAT and ACT entrance exam takers, as compared with students in the highest-performing states. Moreover, fewer Kentucky eighth graders score "proficient" on National Assessment of Educational Progress exams than do their peers in higher-performing states. Again, Kentucky students have made substantial progress in these areas in recent decades. Yet the legacy of underachievement renders the process of educational "catch up" long and difficult.

TABLE 4
College Preparation Indicators

K-12 Achievement Indicators	Kentucky	Average of Top States*
Number of scores that are 3 or higher on Advanced Placement subject tests per 1,000 high school juniors and seniors	50	158
Number of scores in the top 20% nationally on SAT/ACT college entrance exams per 1,000 high school graduates	130	192
Percentage of 8th graders scoring at or above "proficient" on the NAEP assessment		
Math	16%	33%
Reading	29%	38%
Writing	21%	31%

*Top States in this category include Alaska, Connecticut, Illinois, Massachusetts, Nebraska, New Jersey, Utah, and Wisconsin.
Source: The National Center for Public Policy and Higher Education, Measuring Up 2000: The State-by-State Report Card for Higher Education

THE BOTTOM LINE

Determining what these statistics imply for the next 20 years of Kentucky postsecondary education is not an easy task. As noted, the Commonwealth has made enormous progress in recent decades, a time when citizens began to take formal education more seriously and to invest vastly greater resources in both K-12 and higher education. In addition, state leaders have set formidable achievement goals for Kentucky students both in terms of academic performance at the K-12 level and of enrollment and completion rates at the postsecondary level. However, educational accomplishment is not well distributed across the state; the best educated citizens concentrate in the urban centers and the urban triangle, leaving many rural parts of the state with only small percentages of adults who have pursued postsecondary opportunities. Moreover, a great many Kentucky students suffer from the very disadvantages most likely to keep them from postsecondary enrollment: a greater than average percentage of them come from homes with parents who have no postsecondary education, and increasing numbers of them are living in single-parent homes at a time when fewer postsecondary opportunities are available to undereducated parents receiving government assistance. Hence, at the same time when the state has pledged to see substantial increases in postsecondary enrollment, many of its students will have to overcome enormous barriers to participation.

Though we will discuss policy options the Commonwealth might consider to help counteract the effects of these problems—which, once again, flow from the many decades of educational impoverishment of the state's citizens—it should be clear from the outset that many remedies must somehow target those whom colleges and universities usually never encounter. Certainly universities and other postsecondary education institutions can make changes that will help students complete degree programs more quickly and efficiently or transfer among institutions more effectively. And indeed, various elements of HB 1 reform have been focused on increasing retention rates and streamlining the transfer process. Inasmuch as it is crucial, however, for Kentucky high school students to take the pipeline steps necessary for postsecondary enrollment and for far greater numbers of students to aspire to a four-year college degree, then state policies will have to target middle and secondary school students rather than the postsecondary institutions themselves.

Postsecondary Education Prospects

The Survey Rationale

Even though the social, economic, and historic contexts of higher education in Kentucky shape the state's plans to expand postsecondary enrollment, the attitudes and plans of the state's high school students will ultimately govern participation rates. To gain insight into these attitudes and plans, the Kentucky Long-Term Policy Research Center collaborated with two University of Kentucky entities—the Survey Research Center and the Policy Analysis Center for Kentucky Education—during 2000 to survey high school students and thereby gain insights into the future of postsecondary education in the Commonwealth. The pages that follow present our analysis of the survey results, which we believe come at a key moment in both the postsecondary and elementary-secondary story of the Commonwealth. Higher education decisions these students make in the next few years will be pivotal in terms of determining whether the state meets the lofty education goals the Council has set.

In addition, the students who responded to this survey have spent most of their schooling years in an education system dominated by changes prompted by the 1990 KERA legislation. Perhaps not surprisingly, an important goal of KERA was to ensure that increased percentages of students made a successful transition out of high school and into adulthood. As a result, accountability scores of Kentucky high schools are determined, at least in part, based on how many students move soon after graduation into postsecondary training, a job, or the military. These students also will be entering a postsecondary education system that has recently adopted policies designed to integrate state institutions more closely and has received funds to support distinctive missions and programs. Finally, they will be entering postsecondary education during the first year of a millennium wherein extraordinary emphasis has been placed on using and mastering new technologies.

THE SURVEY RESULTS

Given the goal of substantially increasing postsecondary enrollment levels in the Commonwealth, it strikes us as crucial to understand what Kentucky's high school students think about the issues surrounding participation in more education. Why do they wish to attend community or technical colleges, or four-year colleges or universities, and how do they believe they will benefit from this learning? Are their views different from or similar to views of students in other contexts or countries? How might their values, as reflected in their perceptions and opinions, mesh with what they are likely to experience in postsecondary institutions in the Commonwealth? Those are some of the questions that can be addressed by the results of this survey. The following is a list of the questions that will be addressed in this report section based on survey findings.

1. Who are the students who responded to the survey?
2. What are their general plans for postsecondary education?
3. What and how did these students do academically?
4. How do these students rate their schools?
5. What are these students' general attitudes?
6. Why are these students pursuing postsecondary education?
7. Who influenced their choices and when?
8. How do these students spend their time?
9. How knowledgeable are these students about financial assistance?
10. Is there a "brain drain" from Kentucky?

Before turning to specific survey results, however, we offer a few words about the survey process itself and about the general picture that emerges in this section. The intention of the collaborators in this project was to obtain as close to a random sample of Kentucky high school students as possible. Rather than identifying a target student sample through secondary schools, the project director determined that the least restrictive manner of obtaining a random sample of students was through state driver's license records. Accordingly, Kentucky's motor vehicle office used its database to select randomly the names and home addresses of 1,500 Kentucky driver's license holders who were 16 as of the spring of 2000 and another 1,500 of whom were 17 as of that same time. Hence, some 3,000 16- and 17-year-olds across the state were identified as potential participants. The survey instrument itself was developed by members of the project team and was designed both to elicit information relevant to Kentucky's postsecondary future and to reflect the few other high school student surveys that came to team members' attention. Appendix A contains a slightly more detailed description of the sample drawing methodology, and Appendix B contains a copy of the survey questionnaire itself. UKSRC administered the paper-and-pencil survey during the summer and early fall of 2000, employing standard survey and follow-up procedures. The Center mailed the surveys to all 3,000 individuals early in the summer and then sent two follow-up postcards later in the summer to those who had not yet responded.

In terms of this snapshot of Kentucky high school students, our survey results show that college-bound youth in the Commonwealth are reasonably well poised to pursue postsecondary enrollment opportunities. On many indicators of academic, social, and economic health, these students in general compare well to their counterparts across the nation. We are less sanguine, however, about Kentucky's high school students who are not already inclined to enroll in postsecondary education—those students defined in the previous section as "disadvantaged." Though we cannot use survey results to shed much light on these students—for reasons we detail just below—we nevertheless believe that various findings that do emerge are relevant to the plight of disadvantaged students in Kentucky.

STUDENTS WHO RESPONDED TO THIS SURVEY

Of the original 3,000 survey recipients, about 1,100 students, almost 90 percent of whom were either juniors or seniors in high school, responded to the questionnaire. Table 5 provides information about the background characteristics of the students.

TABLE 5
Background Characteristics of Survey Respondents

Variable	Sample	Kentucky College Students[1]	National Statistics[1]
Parent Income			
Less than $20,000	10.9%	•	10.8%
$20,001 to $40,000	23.3	•	19.8
$40,001 to $70,000	36.3	•	31.6*
Above $70,000	29.5	•	36.9*
Parent Education			
Mother—College or More	41.5%	•	•
Father—College or More	46.5	•	•
Gender			
Female	56.8%	58.9%	55.9%
Male	43.2	41.1	44.1
Ethnicity			
White	94.6%	92.3%	81.2%
Minority	4.4	9.7	18.8

[1] Attitudes and Characteristics of Freshmen, Fall 1999, *Chronicle of Higher Education Almanac, 2000-2001*
* These are rough estimates, given that national categories differ somewhat.

Based on these demographic comparisons, it appears that students in the Kentucky high school sample compare favorably with students generally attending higher education. For example, the reported income of the Kentucky sample is similar to that reported by students nationally. About two thirds of those in each

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group report family incomes above $40,000, an indication that higher education plans and enrollments remain predominately middle- and upper-class phenomena. This sample, Kentucky college students in general, and students who formed the national sample are similar in terms of gender as well. In each case the majority of students are female at almost a six-to-four ratio.

While this sample is extremely useful for answering questions about the college-bound high school student population in Kentucky, it is not as representative of the *total* high school population as project managers were hoping it would be. For example, students in the sample come from families with higher parental education levels than the "average" for the state. Although there are no comparable data for Kentucky students and those in the national statistics, we know from recent U.S. Census Bureau statistics that about 17 percent of Kentucky adults have at least a college degree, whereas over 30 percent of the students in our sample come from homes where at least one parent has completed college. Though the sample is clearly not representative of Kentuckians in general, it may not be biased upward in terms of parents' educational levels because a college-going population is typically composed of students whose parents have had more education.

Similarly, the sample is less representative than it should be in terms of the ethnic backgrounds of those who responded. The sample contains less than 5 percent minority students, whereas the Kentucky high school student population is around 10 percent minority. It is worth noting, as well, that neither the survey sample nor the Kentucky student population as a whole is as diverse as that of many other states. Almost 20 percent of students nationally are minority group members. Despite this disparity in minority group representation, the overall results of the survey are likely to be sound as far as the college-bound population is concerned (an additional 5 percent of minority respondents, for example, would likely not demonstrably influence the overall results). It seems reasonable to say, therefore, that responses to these survey questions can produce a realistic picture of what Kentucky's postsecondary students of the future think and believe about various aspects of their past experiences and future expectations.

WHAT ARE THEIR GENERAL PLANS FOR POSTSECONDARY EDUCATION?

When asked about their plans for life after high school, some 95 percent of the sample students indicated they would pursue additional educational opportunities. The most recent transition data from KDE show that, statewide, around half of Kentucky high school students proceed to college within a few months of graduating. The majority of the students from the sample who were not pursuing additional education said they either planned to work or to enter the military. Only one person responded that, quite simply, he had no plans. Because such a small percentage of the sample is making no plans for further education, the majority of this report will focus on those who are. Table 6 describes the preferences of those who are continuing their education.

TABLE 6
Post-High School Education Plans of Students

Choice	Number	Percent[1]
A public community or technical college in Kentucky	169	17
A public, 4-year university in Kentucky	577	57
A private, 4-year college in Kentucky	71	7
A 4-year college out of state	182	18
A trade or business school	18	2

[1] Percents may not total 100 since they have been rounded.

As is evident from Table 6, almost two thirds of survey students aspire to either a private or public four-year college or university in Kentucky. This makes sense, we should add, given that roughly the same proportion of all postsecondary students in the state currently attend four-year public and private colleges and universities. About one fifth of the students plan to attend a four-year college outside of the state; hence, over 80 percent of these students plan to remain in Kentucky to pursue their educational careers. Those who appear to be headed out of state will be examined more closely in a subsequent section on the issue of a "brain drain."

Given that about 80 percent of sample students are planning to attend a four-year college or university and that the remaining approximately 20 percent is heavily weighted, almost 10 to 1, toward attending a community or technical college rather than a trade or business school, we believe the differences among the types of institutions students plan to attend are important. Hence, a majority of the subsequent data analyses is reported according to the type of institution these individuals wish to attend, and we do not include in our results the small number of trade and business school aspirants.

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WHAT AND HOW WELL DID THESE STUDENTS DO ACADEMICALLY?

The survey asked students a variety of questions about their academic preparation in high school: Are they taking college preparatory courses; how much homework do they do; what is their grade point average; and how seriously do they take tests and testing. Table 7 provides information about the academic preparation of the students.

TABLE 7
Academic Preparation by Postsecondary Choice

	KCTC*	KY 4-yr. Public	KY 4-yr. Private	Out-of-State 4 yr.	KY Overall
Number of Respondents	169	577	71	181	1016
Grade Point Average	3.08	3.43	3.56	3.51	3.39
Homework and studying outside of class is greater than 5 hours per week	16%	31%	32%	47%	31%
Taking or have taken Algebra II	80	91	89	91	89
Taking or have taken chemistry and physics	70	88	90	91	85
Taking or have taken foreign language	52	79	90	88	77
Taking or have taken AP** courses	22	43	51	57	42
Advised to take pre-college class by teacher	62	75	82	79	74
Advised to take ACT/SAT	88	96	94	96	94
I tried my very best on CATS Test	47	53	48	38	49

* Kentucky Community or Technical College
** Advanced Placement Courses

As would be expected, a higher percentage of students who were preparing for a four-year college or university took college preparatory courses than those expecting a community college or trade school education. Almost 90 percent of those students planning a four-year degree reported taking or having taken Algebra II, chemistry and physics, and a foreign language. Over half of students planning to enroll in a private college or to go out of state reported taking or having taken the most challenging high school courses available—Advanced Placement (AP) courses. That percentage was lower, however, for students bound for public universities in Kentucky.

The overall reported grade point of students in the sample is 3.39, an average that could be obtained by earning an A in 8 of 22 high school courses (while also receiving a grade of B for the rest). Grade point averages are highest among the groups that either plan to go out of state to college or plan to attend one of Kentucky's private institutions. They are lower for students planning to attend a community college, technical school, or trade school. While this is roughly what one might expect given the academic hierarchy within American higher education, it does suggest that students who plan to attend community colleges may not be po-

sitioning themselves well to move on to four-year institutions in Kentucky or elsewhere should their postsecondary aspirations shift.

About one third of the students reported doing five hours or more of homework per week. That one-hour-a-day-or-more percentage was highest among students intending to leave the state for college and lowest among students planning to attend a community or technical college.

Almost three fourths of these students say they received advice from teachers to take pre-college courses, while a stunning amount—some 94 percent—were advised to take college entrance examinations, either the Scholastic Achievement Test (SAT) or the American College Testing Program (ACT). While we do not know what percentage of these students will actually have taken a college entrance exam by the time they graduate, it is encouraging to know they are being steered in that direction, given the importance of taking these tests to actual enrollment.

The grade-point averages of these students suggest they have done well academically in courses that (in theory) should prepare them well for additional education. And the pattern of responses—with greater preparation levels and higher grades for those planning to attend four-year schools—suggests that these students are employing a rational framework for making decisions about their post-high school plans.

However, without knowing the exact content of their high school courses or the variations in grading standards from school to school, it is difficult to assess the quality of the academic preparation of these students. Courses with similar names but different content and differing expectations are often offered to students on different academic tracks. Having taken an Algebra II course, for example, may mean different mathematical experiences, depending on what school a student attends. Until Kentucky undertakes a large-scale student-level analysis of high school assessment results in the different subject areas, it will be difficult to determine the effects on achievement and college preparedness of different courses, course sequences, and school programs.

THE STATEWIDE ASSESSMENT

The Commonwealth Accountability Testing System (CATS) is Kentucky's statewide assessment, a range of tests given to students statewide, and the resulting scores are used in what is called a high-stakes accountability system for schools. Aggregated student scores are the main factor in determining whether a school is financially rewarded for greater-than-expected test score increases, commended for adequate progress, or sanctioned in a variety of ways if test scores do not improve enough or even decline. Because schools are rewarded or sanctioned on the basis of student test scores but individual students are not, many in Kentucky have questioned whether students are adequately motivated to do their best on the test and whether a lack of motivation may affect the resulting school scores. There is a postsecondary connection to this issue as well. Namely, no higher education institutions in Kentucky or anywhere else utilize CATS results,

either from the tests themselves or from the writing portfolios students also prepare, to make application or placement decisions. Moreover, the newly implemented KEES higher education scholarship program is based on high school grades and is not influenced by CATS results. These facts presumably signal students that the CATS system has no personal consequences for them.

When students in this survey were asked how much effort they expended to do well on CATS tests, about one half of them said they tried to do their very best. Another 40 percent answered "I try" when asked about the effort they expend on the state assessments. This is perhaps a greater share of students indicating concern about these tests than anecdotal evidence has suggested is the case in many schools.

TABLE 8
Effort on CATS Assessments

	I try my very best	I try or try my very best
Kentucky Community or Technical College	47%	92%
Kentucky 4-year University	53	91
Kentucky Private 4-year College	48	87
Out-of-state 4-year College	38	80
All Categories	49	89

However, at least two caveats suggest that these results are not cause for policymakers to be satisfied with student motivation to perform well on state assessments. First and most interestingly, students planning to leave the state—those with the highest average GPAs—were *less* likely to try their best, whereas those planning to attend four-year universities in Kentucky were *most* likely to try their best. The latter category is the only one where more than half of the students indicated they were highly motivated when taking the CATS assessments. Second, as noted earlier, these results can only be construed to apply to college-bound students in Kentucky. In many of the state's schools, fewer than half of the students expect to pursue higher education. If only about half of the college-bound youth in Kentucky high schools give their best to these tests, it is hard to believe that significant percentages of non-college-bound youth will try any harder. When less than half the students and a majority of those who are the best prepared indicate that they did not try their best on the test, we have serious concerns about the validity of the school scores and the resulting accountability decisions. These results, in addition, make understandable the concerns expressed among school personnel about the problems of motivating students to take the statewide assessments seriously.

HOW DO THESE STUDENTS RATE THEIR SCHOOLS?

Various questions on the survey ask students to assign grades—A through F—to courses they have taken and services provided by their schools. These ratings seem particularly important, as noted earlier, since the students have experienced KERA policies and programs for the great majority of their schooling. Table 9 illustrates those perceptions.

TABLE 9
Percent of Students Who Grade Their School's Courses and Grading Procedures "A" or "B," by Postsecondary Choice

	KCTC*	KY 4-yr. Public	KY 4-yr. Private	Out-of-State 4-yr.	KY Overall
Number of Respondents	169	577	71	181	1016
Mathematics	72%	82%	76%	82%	80%
Physical Science	68	77	73	77	75
Social Sciences	64	74	85	84	75
English	77	86	92	83	84
Foreign Language	50	64	69	61	61
Computer Skills	64	69	61	57	66
Career Education/Planning	51	44	51	38	45
Textbooks/Materials	55	61	69	65	61
Grading Procedures	55	65	62	66	63

* Kentucky Community or Technical College

The overall proportion of students who give A or B grades to their courses varies dramatically across the subject categories. The more traditional disciplines—mathematics, physical science, social science, and English—get the highest marks, while foreign language is substantially lower. What might be considered the array of services that schools are expected to provide tend to get low marks as well. In particular, career education and planning is given an A or B by less than one half of the students. Overall ratings of grading procedures, textbooks/materials, and computer skills are somewhere between those of career planning and the ratings for the more traditional disciplines.

Not surprisingly, differences in these perceptions exist among students based on the categories of schools they plan to attend. Students expecting to attend community or technical colleges or trade schools tend to give lower ratings to courses in the traditional disciplines. This may not necessarily be a matter of disagreement between them and those who are attending four-year institutions. As mentioned above, the placement of students on different academic tracks, which happens in many schools, may mean that students in the survey are evaluating different kinds of experiences. Those on higher academic tracks may be receiving the best instruction. Also, as we saw earlier, students who are *not* pursuing a four-year college degree devote less time to homework, so less preparation for class could help account for negative attitudes toward academic subjects. For the other

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"nonacademic" areas, there are no big differences among students attending various kinds of postsecondary institutions.

Although most students in the sample rate the traditional academic courses highly, it is difficult to know whether those ratings are related to KERA. Since there are no prior data for these questions, the responses may or may not indicate positive changes over time. Yet the responses are sufficiently positive for us to infer that educational reform has not harmed course offerings in Kentucky high schools.

Additional questions on the survey may provide more direct evidence about the effects of KERA. One strand of the reform, for example, has been an emphasis on technology and its use in the schools. The survey asked students a variety of questions about computing and where they acquired their computing skills. Table 10 summarizes their responses.

TABLE 10
Student Computing: Access, Where Learned, and How Well

Students Having Access to a Computer	Number	Percent
Personal computer at home	887	87
Internet at home	774	76
Where did you acquire the following computer skills?	**Mostly Outside of School**	**Mostly in School**
Use a spreadsheet to analyze data	22%	65%
Format documents using a word processor	38	60
Use the Internet to find information for a specific project	64	34
Use e-mail to communicate or to send and receive attachments	77	13
How capable are you of performing the following computer skills?	**Without Help**	**With a Lot of Help**
Use a spreadsheet to analyze data	39%	9%
Format documents using a word processor	84	2
Use the Internet to find information for a specific project	86	2
Use e-mail to communicate or to send and receive attachments	75	5

Despite the fact that a substantial number of students have access to computers in their homes, the effects of computers in schools are clearly evident in their survey responses. Indeed, the overwhelming majority of students learned about word processing and using spreadsheets in school. In addition, over one third of the students report acquiring skills in using the Internet in their schools. Using e-mail is the one skill area where experiences in the home quite clearly dominate those of the school.

Not only have students acquired computing skills, they also appear capable of using them. With the exception of being able to analyze data using a spreadsheet, which less than half of the students say they can do without assistance, the remaining skills—using a word processor, the Internet and e-mail—appear to be solidly established among these students.

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Thus, schools may be "evening the playing field" in areas such as computing. By giving every student access and providing them with the requisite skills, schools can compensate for lack of computing opportunities in the home. These survey data permit examination of the extent to which parents' income and educational levels were related to having a computer and Internet connection at home. As one might expect, there are big differences associated with students' backgrounds. Almost all children of parents in the highest income group report having a personal computer at home while less than 60 percent of children from the lowest income groups say they do. The comparable numbers for an Internet connection are 93 percent and 45 percent. Similar differences are found for levels of parents' education. Ninety-six percent of students whose mother's educational level is college or above report a computer at home compared with 58 percent for students of parents with the lowest educational level. Results are almost identical when comparing students with fathers from the highest education level with students whose fathers are at the lowest levels.

The differences among these groups are substantially smaller when one looks at students' reports of how capable they consider themselves to be with computers and software. For example, students of highest parental income and lowest parental income levels report differences of only about 7 percentage points in terms of using the Internet without assistance, 13 in terms of using word processing, and about 10 when using a spreadsheet. The results are similar for both mothers' and fathers' education levels. For spreadsheets, the differences are 7 and 12 percentage points; for word processing, 9 and 11 percentage points; and for using the Internet, 14 and 13 percentage points. The biggest differences among the groups have to do with e-mail where, for each of the background characteristics, the differences are about 25 percentage points.

The pattern of differences between the use of word processors and spreadsheets in schools vis-a-vis the use of the Internet and e-mail may reflect a reluctance on the part of schools to confront the problems of computer "literacy." That is, unfettered access to the Internet by students with basic computing skills—which could conceivably improve their Internet and e-mail capabilities—might also provide potentially embarrassing situations for school personnel because some students might visit inappropriate websites. Hence, school officials are presumably engaging in a balancing act, attempting to foster computer skills without exposing students to unsuitable material that is freely available over the Internet. At present, this approach seems to promote word processing and spreadsheet skills while limiting other high-technology skills somewhat.

These data suggest, in short, that the smaller gaps between students' reports of their technology capabilities and the presence of a computer in their home are due largely to schooling. Although students of different backgrounds do not consider themselves equally capable, the differences are much smaller than they would likely be if the students did not have those experiences in schools. These seem to be among the effects of schools and of the emphasis within KERA on expanding technology available to schools.

WHAT ARE THESE STUDENTS' GENERAL ATTITUDES?

The survey included three general attitude questions about the amount of work they have to do and their future in Kentucky, to which students could strongly agree, agree, disagree, or strongly disagree. The percentage of students who responded that they "strongly agree" to these questions is shown in Table 11.

TABLE 11
Student Attitudes, by Postsecondary Choices, Kentucky and United States

	KCTC*	KY 4-yr. Public	KY 4-yr. Private	Out-of-State 4-yr.	KY Overall	US Overall†
I feel overwhelmed by all I have to do.	19%	21%	21%	20%	21%	30%
I will have to move out of state to succeed.	5	3	0	19	6	•
I will have to leave my hometown or county to succeed.	17	21	14	34	22	•

* Kentucky Community or Technical College
† *Chronicle of Higher Education Almanac, 2000-2001*

Based on these results, Kentucky students seem well adjusted compared with students in the United States in regard to responses to the statement, "I feel overwhelmed by all I have to do." There is almost a 10 percent difference across the board, suggesting that Kentucky youth do not feel as overwhelmed as their counterparts elsewhere in the United States. Only students who plan to leave the state for postsecondary education seem to agree with the statement, "I have to move out of the state to succeed." However, over 20 percent of the students believe they will have to leave their hometowns or counties to succeed. An additional analysis of these data suggests that more rural students than urban ones believe they must move to succeed. Students from Kentucky's two largest urban areas, in fact, had lower percentages of agreement than the remainder of the students. In addition, there is a negative correlation between the size of the sample by county and strongly agreeing that one had to leave home to succeed. That relationship suggests that rural students are more likely to believe their prospects are not good if they stay in the community where they grew up.

In addition, students who plan to leave the state are much more likely to strongly agree to the questions about leaving the state or leaving home to succeed. This consistency between their plans and their attitudes is expected. We would question these results if students planning to leave the state for their education would give responses similar to those who will stay on questions like these.

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WHY ARE THESE STUDENTS PURSUING POSTSECONDARY EDUCATION?

Eight questions on the survey concern students' reasons for attending postsecondary institutions. Results of a survey of a sample of students from across the United States are available to provide some comparisons between Kentucky students and those in the nation on these particular questions. Table 12 shows reasons students gave for pursuing additional education.

TABLE 12
Reasons for Attending Postsecondary Institution, by Postsecondary Choice

Responses	Percent Responding "Very Important"					
	KCTC*	KY 4-yr. Public	KY 4-yr. Private	Out-of-State 4-yr.	KY Overall	US Overall [1]
My parents want me to go.	32	37	39	28	34	35
I want to become a more cultured person.	29	35	25	36	33	35
*I want to get a rewarding, challenging job.***	56	75	69	72	70	73
I want to make more money.	78	74	56	57	70	71
I want to prepare for graduate/professional school.	30	39	42	39	37	56
I want to train for a specific career.	59	61	65	52	59	72
I want to learn more about things that interest me.	57	62	62	62	61	72
I want to get away from home.	14	15	13	26	17	18

* Kentucky Community or Technical College
** The question for the United States is somewhat different from the Kentucky question.
[1] *Chronicle of Higher Education Almanac, 2000-2001*

A comparison of overall responses of students nationally and Kentucky students suggests both similarities and differences between these groups. Roughly equal percentages of the national and Kentucky students say they plan to pursue postsecondary education because their "parents want me to go," "to become a more cultured person," "to get a rewarding job," "to make more money," and "to get away from home." The strongest among the above-mentioned reasons, endorsement rates above 70 percent, are those related to getting a job and making more money. Slightly less that 20 percent say they wish to get away from home.

Questions related to academic matters—whether students are preparing for graduate school, training for a career, learning about things—elicit different responses from students nationally and Kentucky students. Those differences, by margins of from 10 to 20 percent, indicate that students nationally are more likely to cite academic reasons for pursuing higher education than are Kentucky students. This is particularly true in terms of preparing for graduate work (an almost 20 percent difference) and training for a particular career (a 12 percent difference).

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Only about a third of either group identifies the pursuit of additional schooling as a means of becoming a more cultured person.

If Kentucky students are more likely to emphasize vocational and economic reasons rather than academic ones for attending postsecondary institutions, their responses would be consistent with the rhetoric of postsecondary educational reform that has been prominent within Kentucky in recent years. If adults create certain expectations about the economic benefits of higher education, in other words, we should not think the young could escape the influences of those expectations. We address this issue in greater detail in the next section of this report.

Student responses to these survey items differ in intriguing ways based on their college or postsecondary institution choices. For example, Kentucky students attending four-year institutions either in or out of state are much more likely to say that a reason for attending is to get a rewarding, challenging job than are students who are headed for a community college or a trade school. This is counterintuitive, since the latter schools are most often viewed in strictly vocational terms, whereas the former are seen as venues for educating college students more broadly.

As would be expected, students who say they will pursue higher education opportunities outside of the state are more likely to give as a reason "to get away from home." These same students are also less likely to say that they wish to attend these institutions to make more money and to train for a particular career. Despite being apparently less economically motivated, these students do not endorse academic reasons for attending postsecondary institutions any more enthusiastically than do students who say they plan to make other educational choices. A possible exception to the latter is that students leaving the state are slightly more likely to want to become a more cultured person as a result of their postsecondary experiences.

A broad generalization about these responses is that Kentucky students are similar to all students nationally in terms of economic or vocational reasons for attending higher education, but are less likely than students nationally to give academic reasons for their choices. Of course, one cannot necessarily attribute those views of students to the rationales for further education promulgated by state officials. Yet it would seem desirable for students to hear justifications for higher education based on traditional educational values.

There are general differences, too, among students grouped by their postsecondary choices. One noteworthy pattern emerges among those intending to leave the state for higher education. A second comes from those who plan to attend four-year institutions, and a third comes from students planning to attend community college, technical schools, or trade schools. Students leaving the Commonwealth are less vocationally oriented in the sense of wanting to make more money or to train for a specific career. Rather, and perhaps paradoxically, those students, as well as those expecting to attend four-year schools, are more likely to want to get a rewarding, challenging job. Indeed, we discovered that the chief source of variation among survey respondents on many of the factors we analyzed had to do with the type of institution these students were planning to attend. We therefore have provided many of our results in tables that

break down students based on whether they plan to attend certain kinds of postsecondary schools.

WHO INFLUENCED THEIR CHOICES, AND WHEN?

Students were asked when they decided to pursue postsecondary education and who influenced those plans. Table 13 presents these responses.

TABLE 13
When Decision to Attend College Was Made, by Postsecondary Choice
(Percent of Students)

When Decision Was Made	KCTC*	KY 4-yr. Public	KY 4-yr. Private	Out-of-State 4-yr.	KY Overall
Number of Respondents	167	566	69	177	997
Elementary School	13	40	43	57	36
Middle School	21	18	20	18	18
Freshman/Sophomore Year of High School	21	17	7	9	17
Junior/Senior Year of High School	31	13	14	11	17
Not Yet Decided	15	11	14	5	12

* Kentucky Community or Technical College

A crucial finding for us is that sample students report having made decisions about pursuing higher education quite early in their school careers. Over half of the students say they had made their postsecondary plans by middle school or earlier; fully 75 percent of those who say they plan to attend out-of-state schools had made this decision by this point in their lives. In fact, for students planning to enter four-year institutions, between 40 percent and almost 60 percent say their decision was made in elementary school. Although students who plan to attend either community colleges or trade schools tend to make their decisions later, the majority of students had decided by their first or second year in high school. That students perceive or remember having made such decisions so early is counterintuitive. Indeed, how do elementary school students know what they will be doing 10 years hence?

Part of the answer to this puzzle appears in students' responses to survey items about who influenced their postsecondary decision. Students were allowed to choose multiple influences for this question; that is, they could name as many influences as they wished. Figure 8, therefore, presents results in terms of the percentage of students who chose as one of their influences persons in the given categories.

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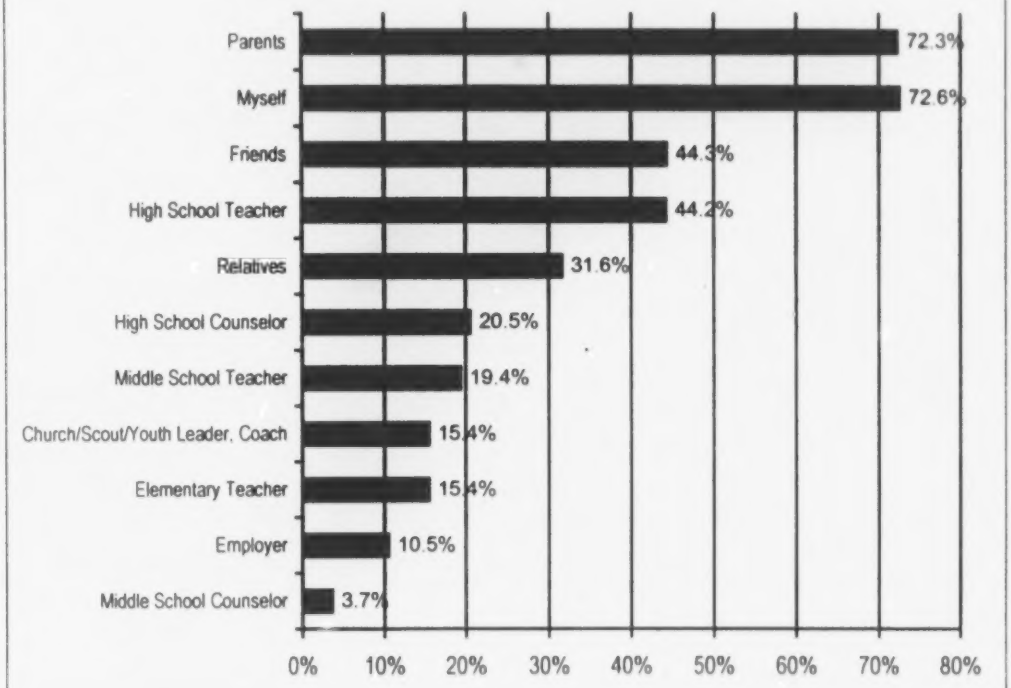
FIGURE 8
Percent of Students Who Say Their Choices Were Influenced by Selected Persons



The pattern of these results seems clear. Students say they are most influenced by persons in the family or home rather than by school personnel. Over 70 percent of the students mentioned that their parents influenced their choices, while the highest percentage for persons in the school setting was less than 50 percent, attributed to high school teachers. About 20 percent mentioned a high school counselor, and only about 4 percent mentioned a middle school counselor.

Taken together, these findings about who influences students and when may have serious ramifications for developing policies to encourage greater numbers of Kentucky youth to pursue postsecondary opportunities. Quite simply, schools appear to have far less influence over such decisions than do students' families, at least among traditionally college-oriented youth. If the Commonwealth is to increase its college-going population, it would appear that changes have to be made in how parents perceive the importance of higher education. Schools may have little influence because the decisions are made early and the persons who influence them most are in the students' own families.

The magnitude of reshaping the messages being sent by parents is substantial. When students were asked whether they were encouraged by their parents to attend college, almost 90 percent of sample students said their parents were very encouraging. As one might expect, students planning to attend four-year colleges or universities perceived more encouragement; about 95 percent of the students

said their parents were very encouraging. Students planning to attend community colleges (78 percent) or trade schools (61 percent) were much less likely to perceive strong encouragement. Given the strong linkage among parental encouragement for students to attend college, decisions being made in the early grades, and student intentions to pursue postsecondary education, it seems to us crucial to focus attention on changing attitudes about higher education among parents who have not previously urged their children to attend college. Put differently, the "advantaged" youth in our survey were influenced as youngsters by their parents to continue formal schooling after high school. If disadvantaged youth in the state are to increase their postsecondary enrollment rates, we must devise ways to encourage them early in their school careers to pursue higher education.

The issues raised by these survey questions and answers are deceptively complex. Understanding the responses requires making inferences about how students interpreted the words "influence" and "encouragement." It is clear, however, that whatever the interpretation, parents and family do influence students more and are perceived to provide more encouragement than are adults in the school setting.

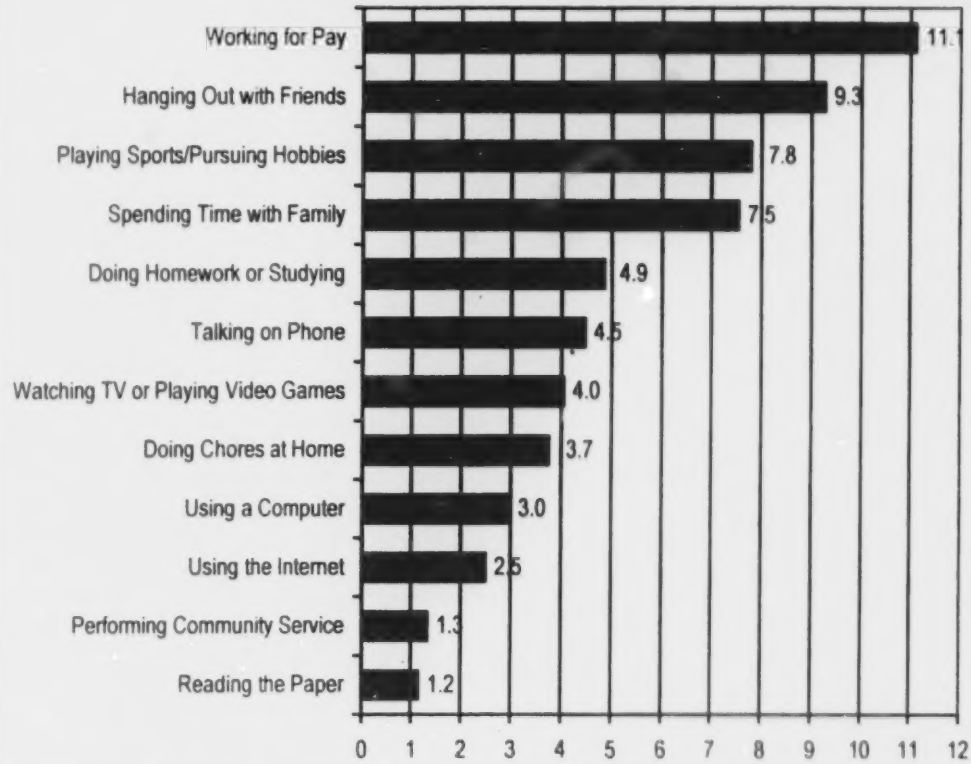
How Do Students Spend Their Time?

Students were asked, "During the school year, about how many hours a week do you spend doing the things listed below?" They could respond in the following ways: none, less than 1 hour, 1-2 hours, 3-5 hours, 6-10 hours, 11-15 hours, 16-20 hours, and over 20 hours. The categories and responses[28] are presented in Figure 9.[29]

[28] These are estimated hours per week. The midpoints of the categories were used to create the estimates.

[29] It should be noted that the categories are not mutually exclusive in either Figure 9 or Figure 10. Students can, for example, be doing homework and watching television or pursuing interests in sports and hobbies and hanging out with friends.

FIGURE 9
Number of Hours Students Report Spending in Various Activities Each Week



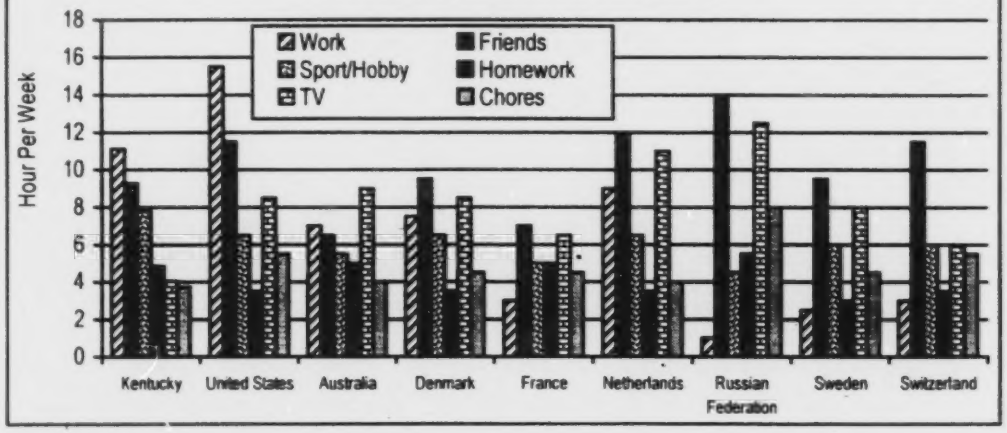
Students report spending the largest amount of their time outside school working for pay. Next in order are hanging out with friends, pursuing interests in sports or hobbies, and spending time with their families. Lowest on the list are activities such as reading the paper or serving their communities. In the middle are activities such as watching TV, talking on the telephone, and doing homework. In general, students report engaging in activities that allow them to pursue personal interests rather than broader, community ones.

A potential drawback to state leaders' rhetorical emphasis on the economic benefits of postsecondary schooling is that this view seems likely to create persons who are better consumers, but not necessarily better citizens. Similarly, the emphasis on working for pay could create a speculative pattern of young persons becoming more consumer-oriented both in terms of material goods and greater education. More education from that point of view is simply a commodity that can provide a way to consume more.

The fact that Kentucky students report spending more time working than in most other activities should not come as a surprise. These results are comparable to findings from other studies in the United States. They are also similar to what was found in the Third International Mathematics and Science Study (TIMSS).

The TIMSS results showing how students spend their time are presented in Figure 10.

FIGURE 10
How Students Spend Time in Kentucky, United States, and Selected Countries



At least one caveat is associated with the Figure 10 results. Namely, the wording for the questions is somewhat different in TIMSS than in the Kentucky survey. One can, therefore, reasonably compare U.S. responses with those of students in other international systems, but not Kentucky responses to the rest. One can also compare the *pattern* of responses from the Kentucky survey with the other patterns. One should not, however, compare the amounts recorded for Kentucky students with the amounts computed for the United States and the international systems.

The most defensible comparisons are those made between typical U.S. students and students in other countries. In those comparisons U.S. students spend far more time working for pay than do students in other countries. U.S. students do five to ten times as much paid work as students in Sweden or the Russian Federation. (Obviously, one reason for this is likely that there are few, if any, jobs available for teenagers in some of those countries.) It is noteworthy, of course, that college-bound Kentucky students *on average* work fewer hours per week than do students in many other states.

It should be pointed out, as well, that U.S. students also spend less time doing homework than most of their international counterparts. Only in the Netherlands is time spent on homework the lowest ranking category as it is in the United States.

How do the college attendance rates compare among the systems in these countries? Answering this question highlights the open and flexible nature of the higher education system in the United States. Namely, a greater percentage of U.S. students pursues higher education here than in the other countries, even though these students have focused less on academic matters in high school than their counterparts elsewhere. According to the Organization for Economic Cooperation and Development (OECD), some 25 percent of 18- to 21-year-olds in the

United States are enrolled in higher education. Comparable rates in the other countries vary from a low of 4.3 percent in Sweden to about 20 percent in France and the Netherlands.[30] It is ironic indeed that although a higher percentage of and more U.S. students will attend institutions of higher education than is the case in other countries, they appear to be spending less time preparing for it.

Despite the differences among these countries in how students say they spend their time, the most striking aspect of these data—as we noted above—is that students in the United States spend far more time working than do students in other countries. Data from other sources suggest, we should add, that relatively few American students work to support their family's budget, although some might be accumulating resources for college. This international context makes the tangled web of consumerism and education in the United States even more vivid. The emphasis here on "growing" the economy and economic rationales for schooling seems to us to foster a kind of consumerism that may be stronger than in other countries. By the time they are in high school, American students typically have substantial expectations in terms of what they would like to purchase—from CDs to clothes and shoes to fast food, and even automobiles and insurance. If students are to join the American consumer culture, they must have money to spend. Most parents would prefer that students earn their own money to purchase these types of items. In addition, American parents typically believe that part-time jobs instill the work ethic. Moreover, numerous sectors of the American economy, especially the fast food industry, thrive due to a labor force comprised largely of readily available teenagers. Therefore, high school students work to afford the goods they like to purchase, and this willingness in turn allows many American businesses to keep costs down and goods available and affordable.

Perhaps the most incisive critique of American teen work practices was offered in Laurence Steinberg's 1997 book *Beyond the Classroom: Why School Reform Has Failed and What Parents Need to Know*.[31] Steinberg's analyses of longitudinal data on nearly 20,000 high school students showed how increased work hours prompt many students to suffer academically and many to disengage from schooling altogether. Steinberg does not say *all* work during high school is harmful; indeed, his research showed that employment under 15 total hours per week usually does not harm student academic performance. The results of this survey show that Kentucky college-bound youth typically work about 11 hours per week, which suggests they are generally not working "too much." However, this is the *average* for survey respondents. In fact, 40 percent of the sample students report working 15 hours per week or more, a circumstance that may adversely affect their academic performance. Steinberg's general point here is worth pondering—namely, that overemphasis on employment during one's high school years will have a long-term negative impact by devaluing the academic enterprise. A second point is worth noting as well. Namely, if high school students were

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[30] Statistics cited can be found via the National Center for Education Statistics website (www.ed.gov) and were originally produced by the International Indicators Project, Center for Educational Research and Innovation, Organization for Economic Cooperation and Development, 1995.

[31] Lawrence Steinberg, *Beyond the Classroom: Why School Reform Has Failed and What Parents Need to Know* (New York: Simon and Schuster, 1997).

compelled to work *fewer* hours per week, would they spend their additional "free" time productively? It is by no means clear that this would be the case.

HOW KNOWLEDGEABLE ARE STUDENTS ABOUT POSTSECONDARY FINANCIAL ASSISTANCE?

Since most of the students in the sample plan to attend some form of postsecondary education, they must believe they can afford to do so. Numerous questions on the survey, however, seek to learn just how much students know about various financial assistance programs. Table 14 gives those results.

TABLE 14
Students' Familiarity with Various Sources of Financial Assistance

Type of Financial Assistance	Very Familiar	Not at All Familiar
Pell Grants	2.7%	69.7%
Supplemental Education Opportunity Grants	1.8	63.9
Work Study Programs	8.5	31.9
Perkins Loan Program	2.0	73.3
Stafford Loan	2.7	72.4
PLUS Loan	1.4	77.0
Federal Student Aid Information Center	6.8	46.4
Kentucky Educational Excellence Scholarship (KEES)	27.3	28.4
College Access Program (CAP)	3.8	60.2
Kentucky Tuition Grant (KTG)	3.7	57.1
Free Application for Federal Student Aid (FAFSA)	12.1	50.3
Kentucky Higher Education Assistance Authority (KHEAA)	13.5	36.8

These results paint a fairly straightforward—and not very optimistic—picture. With the exception of KEES, an embarrassingly small number of students are familiar with the many and varied types of financial assistance available to them and other students. An equally surprising number are not at all familiar with these programs.

As one might expect, there are differences in familiarity with KEES depending on students' choices for postsecondary education. Thirteen percent of community college students, 28 percent of students attending Kentucky's four-year public universities, 43 percent of those who plan to attend Kentucky's private schools, 33 percent of those going out of state, and 28 percent of the students planning to attend trade or business schools say they are very familiar with these programs. Yet it is somewhat disheartening that the highest level of familiarity students register about sources of financial assistance is found in the relatively small percentage of students who are familiar with KEES.

These results are likely linked to two previous findings. As discussed above, students cited parents and family members, rather than school guidance counselors, as being their primary influences in the direction of higher education. If students are unfamiliar with college funding options, perhaps this simply reflects their parents' lack of knowledge about them.

Similarly, students in the sample rated as very low their experiences in schools with career planning. These latter results suggest that many college-bound youth in Kentucky either do not seek the advice of guidance counselors, who are generally knowledgeable about financial aid possibilities, or do so and, for reasons that are unclear, do not become well informed about this topic. These results should not be taken as an indication that high school counselors are ineffective; indeed, there are no data from the survey regarding what they do or how well they do it. Barriers of various sorts could exist that preclude counselors from dealing with issues of financing a college education and informing students of the array of financial resources that may be available to them to pursue additional education. For example, school counselors may be required to spend an inordinate amount of time dealing with discipline issues and may therefore have little time to inform students about financial assistance for college. This is likely, however, to be an arena in which policy changes could be helpful.

IS THERE A "BRAIN DRAIN"?

It has already become clear that survey results differ depending upon students' plans for pursuing various types of postsecondary education. In particular, students who said they plan to attend out-of-state colleges or universities appeared to respond differently than other students to a variety of questions, and they also seemed to come from homes where parents had higher levels of education. Table 15 shows some of those differences.

TABLE 15
Academic and Background Characteristics of Students Planning to Leave the State and Those Not Planning to Leave, by Postsecondary Choice

Variable	KCTC*	KY 4-yr. Public	KY 4-yr. Private	Out of State 4-yr.
Number of Respondents	169	577	71	181
Grade Point Average	3.08	3.43	3.56	3.51
Doing homework and studying outside of class more than 5 hours a week	16%	31%	32%	47%
Taking or have taken Algebra II	80	91	89	91
Taking or have taken chemistry and physics	70	88	90	91
Taking or have taken foreign language	52	79	90	88
Taking or have taken advanced placement courses	22	43	51	57
Female	59	59	69	51
Income above $70,000	11	32	33	48
Mother's education—college or above	11	33	34	55
Father's education—college or above	9	34	48	60
Cost not an obstacle	11	20	21	31
Have to move out of state to succeed	21	16	13	47
Want to become a more cultured person	44	59	58	68
Want to get away from home	25	27	25	51

* Kentucky Community or Technical College

Students who say they plan to leave the state are among the best prepared academically. They report doing more homework, taking more AP courses, and have done well academically when using grade point average as a criterion. These students are less likely to be female, come from homes that are wealthier, and have mothers and fathers who are more highly educated than those of students in the other categories of postsecondary educational choices. In addition, students planning to attend college out of state are less likely to see cost as an obstacle, are more likely to believe that one has to move out of state to succeed, are more interested in becoming cultured persons, and are more likely to want to get away from home than students in the remaining categories. In sum, they appear to be a talented group that is planning to leave the state and, by doing so, will contribute to a type of "brain drain."

The extent to which this brain drain is a uniquely Kentucky phenomena or one shared with other states is an interesting issue. It is likely, indeed, that every state may have a brain drain problem. It may simply be the case that talented students

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wish, in general, to leave where they are and search for what are perceived to be greener educational pastures. Table 16 portrays data on students[32] entering or leaving their states for higher education in Kentucky and a number of its neighbors.

TABLE 16
The "Brain Drain"—Kentucky and Neighboring States

State	Entering First-Year Students from Out of State	Entering First-Year Students Leaving the State	Difference in the Number of First-Year Students Entering and Leaving	Percent Difference in First-Year Students Entering and Leaving
Illinois	11%	21%	-8536	-10%
Indiana	24	13	5402	11
Kentucky	17	13	923	4
Missouri	23	19	1582	4
North Carolina	26	9	7419	17
Ohio	16	15	1150	1
Georgia	20	18	1000	2
Pennsylvania	26	19	6193	7
Tennessee	24	17	2549	7
Virginia	29	21	4039	8
West Virginia	28	16	-491	-12

The percentage of students *entering* a state for higher education is lowest in Illinois (11) and highest in Virginia (29). Kentucky's 17 percent is lower than the majority of these states. The highest percentage *leaving* the state is Illinois with 21 percent; the lowest is North Carolina with 9 percent. Again, Kentucky is among the lowest states in percentage of students leaving. Note that the Commonwealth's 13 percent in Table 16 is lower than the 18 percent of students in this survey who indicated they were planning to leave Kentucky for higher education. That difference could reflect sampling error in the survey, a changing pattern of out-of-state attendance, or both.

In terms of differences between entering and departing students, Illinois has a huge deficit, whereas North Carolina has a large surplus. Of these neighboring states, only one other state, West Virginia, has a net deficit like Illinois. Kentucky's numbers are in the plus category but are small in both number and percentage differences. Figures 11 and 12 display both number and percentage differences for each of the states plus the District of Columbia.

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[32] Note that these are counts of students, not necessarily the most talented students.

FIGURE 11
Difference in Number of First-Year Students Entering and Leaving Kentucky

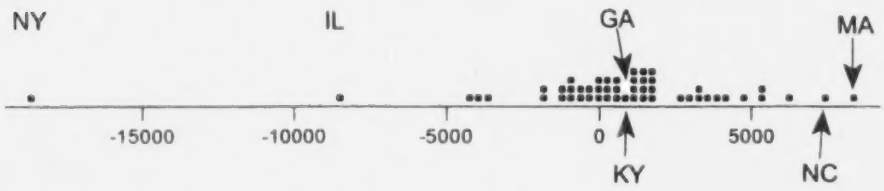
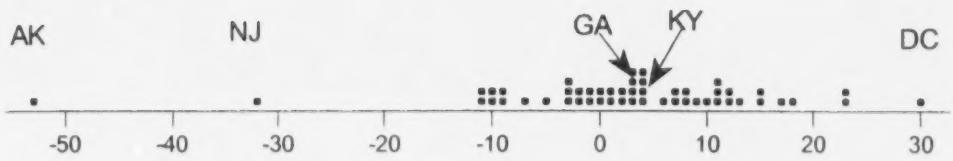


FIGURE 12
Percent Difference Between Entering and Leaving First-Year Kentucky Students



Based on Figures 11 and 12, Kentucky is clearly in the middle of the pack, both in terms of numbers and of percentages of the differences between students who leave or enter the state for the purposes of higher education. Not only is Kentucky in the middle, but also the magnitudes of the differences for Kentucky are small. Massachusetts has almost ten times the size of the differences in terms of numbers, while Washington, D.C., has about eight times the differences in percentage.

Because these numbers do not reflect the academic preparation of the students, it is difficult to know whether there is, indeed, a *net* brain drain. If, however, talented students are leaving Kentucky, it would appear that their numbers are not disproportionate to those of other states. Kentucky is both in the middle and has relatively low numbers.

We would note, in addition, that the recent analysis of Georgia's HOPE scholarship program cited early in this study suggests that Kentucky's new and analogous effort, KEES, may well help persuade many of these talented students to stay

within the state for college. Georgia's program has not had the effect of increasing overall postsecondary enrollment in the state. Indeed, some three fourths of the students who receive the scholarship lose it at some point in their freshman year, and many drop out of college. However, many academically gifted students are applying to top state institutions, particularly the University of Georgia, which has seen its average SAT score increase substantially since the HOPE program was established. If KEES has similar effects in Kentucky, we might expect to see similar ACT score average increases at the UK and U of L.

Perhaps the more important issue about "brain drain" has less to do with where talented Kentucky students go to college and more with what they do after they complete their education. If large proportions of the students who study elsewhere return to Kentucky to pursue careers, then one might argue that their initial migration elsewhere is beneficial. Kentucky students presumably benefit from exposure to different parts of the country. Having lived in a different setting, students may return to Kentucky and use their newly acquired insights to benefit the Commonwealth. Alternatively, if many of Kentucky's best students are educated *within* the state but then leave after they graduate, then the Commonwealth has a problem that cannot likely be remedied through postsecondary education reform.

FIRST-GENERATION CHALLENGES AND THE SURVEY RESULTS

To bring this discussion back to issues addressed earlier in the report, particularly the challenges of attracting and educating first-generation college students, we decided to look at many of the variables in the survey based not on where respondents intend to go to college, but on parents' education levels. The results are shown in Table 17. These data sharply illuminate the relationships between education and income levels that are common across the states. For example, the sample students at the highest income levels come from families with one or both parents having completed college, while those at the lowest come from homes where neither parent attended college. Similarly, as one moves from lowest parental education level to highest, from left to right across the table, one finds the students having greater computer access and skills, taking more academically challenging courses, possessing higher GPAs, spending less time working for pay and more time doing homework, desiring more often to leave the state for college, and trying harder on CATS tests. Clearly, students who come from homes with greater parental education levels have a distinct advantage when it comes to an array of factors associated with preparing for success in college.

TABLE 17
Study Variables Presented by Parent Education Levels

Variable	Neither parent completed college	One or both parents attended college	One parent completed college	Both parents completed college
Number of respondents	303	272	263	209
Income greater than $70,000	10%	19%	38%	61%
Home computer	71	87	93	99
Home Internet access	61	67	84	95
Algebra II—have taken or will take	90	95	98	99
Chemistry/physics—have taken or will take	87	93	97	99
Foreign language—have taken or will take	67	78	89	96
AP courses—have taken or will take	45	52	61	74
4-year university, out of state	9	12	19	39
Use spreadsheet without help	32	36	44	49
Use word processor without help	76	85	84	93
Use Internet without help	82	82	86	95
Use e-mail without help	66	72	79	89
Try very best on CATS	53	49	53	37
Means				
GPA	3.2	3.3	3.4	3.5
Time spent on homework*	4.1	4.3	5.4	6.0
Working for pay*	12.4	11.7	10.2	7.9
Hanging out with friends*	9.0	9.2	8.6	10.3
Reading a newspaper	1.4	.9	1.1	1.3
Volunteering/community service*	1.3	1.4	1.4	1.2

* These are estimated hours per week.

On the other hand, these college-bound Kentucky youths, even those first-generation students who come from families with little or no background in higher education, appear to be generally well poised to pursue postsecondary opportunities. As discussed earlier in reference to the "pipeline steps" issue, 16- and 17-year-old high school students—those in about the 11th grade—need stronger than average GPAs, reasonably high postsecondary aspirations, and plans to take college entrance exams if they are to make the transition to college. (Presumably the final pipeline steps, application to and enrollment in a higher education institution will take place during the senior year.) As we noted early in this section, about four out of five students in our sample are planning to attend a four-year college or university. Even if Kentucky's first-generation students in this sample intend to pursue a bachelor's degree at a rate lower than the average of the sample as a

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whole, these findings suggest they still aspire to a level of postsecondary accomplishment considerably above the averages for all students.

Moreover, first-generation students in our sample had mean GPAs of 3.2, which is high enough to gain entry to all but the most competitive campuses in the state. In addition, a majority of these students have taken or will enroll in key college preparatory courses, such as Algebra II, chemistry, and a foreign language. And even though we do not know how many of the survey students will take a college entrance exam, we do know that the vast majority of them have been advised to do so. Given the high postsecondary aspirations of these students, it is our presumption that the vast majority will indeed sit for ACT or SAT examinations during their senior year in high school.

As we noted at the beginning of this chapter, however, this sample adequately captures the plans and expectations of *college-bound* Kentucky youth. We do not know if other students in the Commonwealth, particularly those from homes without college experience, are similarly well poised to advance beyond high school—indeed, we expect that they are not. Given the accumulation of disadvantages that often accompanies individuals and families at the lowest income and education levels, especially those in rural areas who are not near institutions of higher education, we suspect that a great many Kentucky high-school-age youth are ill-prepared in many respects to heed the Council's exhortations to continue formal education past high school.

SIZING UP THE RESULTS

The tables, charts, and text above encapsulate the views of a random sample of almost 1,100 Kentucky students who responded to an array of questions about themselves, their educational plans, their beliefs, their influences, their views and experiences in Kentucky schools, and a variety of other factors. Although a tabulation of the background characteristics of the students suggests the sample does not adequately represent all high school students in the state, other characteristics of the respondents and aspects of their views that can be placed in other contexts suggest that these responses reasonably represent Kentucky students who are intending to pursue education past high school. What these students have to say, therefore, can be taken seriously and discussed in the context of issues related to participation in more schooling for more persons, as well as in a broader context of what might be the purposes of a system of postsecondary education.

These results, we believe, provide useful information for state policymakers and citizens to consider, and we have tried to interpret these findings in a helpful manner. While this survey allows us to address an array of postsecondary issues, it is not without its limitations. We were unable to learn from this sample, for example, about the relationship between Kentucky students' postsecondary plans and the proximity of high school students to institutions of higher learning in the state. It is probable that students who live near community colleges or four-year colleges and universities know more about their postsecondary options, but we can-

not verify this supposition based upon this sample of students. To learn more about this issue, as well as many other issues that influence college-going rates, it will be necessary for future studies to gather data from a sufficient sample of Kentucky students who are choosing not to pursue postsecondary education.

Conclusion:
Ensuring a Better Postsecondary Future for Kentucky Students

In this report, we have drawn attention to many features of the landscape of Kentucky education at the turn of the millennium. At the outset, we noted how state policymakers spent much of the past decade putting into place new mechanisms for operating and improving Kentucky's elementary, secondary, and postsecondary education systems. About ten years ago, the General Assembly revised public schooling through KERA, which increased and more equitably distributed funding for education and also put new assessment, accountability, support, and local control programs in place. Then, in 1997, the legislature turned its attention to higher education and put in place a new governance structure, provided new resources, and set ambitious goals for system-wide improvement. The intent of both reforms has been to move Kentucky's citizens forward economically and socially by upgrading their skill and knowledge levels.

A key component of this reform involved substantially increasing enrollment in Kentucky colleges, universities, and vocational-technical schools. The type of growth the Council has called for is certainly not unprecedented based on previous enrollment trends; there have been periods, especially during the 1960s and 1970s, when enrollments in Kentucky increased at a substantially higher rate than is anticipated over the next two decades.

However, the current conditions are different from previous eras when postsecondary enrollments across the country were exploding, the college-age population in Kentucky was growing, and the desire for higher education opportunities was expanding into the burgeoning middle classes. Today, Kentuckians' attitudes

toward higher education will have to be transformed for this kind of enrollment increase to take place and new policies will have to be put in place to encourage greater participation.

In addition, the socioeconomic context of the state suggests potential difficulties in terms of high levels of postsecondary enrollment growth. Because of the state's history of low levels of formal education, greater-than-average percentages of students come from homes with parents who have no postsecondary education. Research has shown that students from these backgrounds tend not to take the key steps deemed necessary to make a successful transition from high school to college. Moreover, other conditions among Kentucky families, such as the increasing numbers of single-parent homes, particularly those in the most impoverished rural and urban areas, may make it more difficult for many students to position themselves well for higher education.

The heart of the report is our examination of Kentucky youth survey results. These revealed much about the college-bound students in Commonwealth high schools. From the perspective of academic credentials these students seem well prepared for successful pursuit of these education opportunities. They have high grade-point averages in what appear to be solid academic courses. They believe their preparation has been good as indicated by the high marks that they give instruction in mathematics, science, and language courses. Their preparation may be better than in earlier eras because they participated in schooling during Kentucky's education reform efforts that began in 1990. No comparable data of students' perceptions of schooling prior to 1990 exist, so it is not possible to be definitive about this. On at least one KERA initiative, they appear to be faring well: they view their computing skills, specifically, as being very good and say they learned some of them in school. It is logical to assume that the emphasis on technology in KERA has been translated into useful computing skills. Such success suggests that access to technology should be expanded in Kentucky's public schools so that more students can gain software skills.

On the other hand, Kentucky's college-bound youth do not devote much time outside of school to academic work, spending on average only about five hours per week on homework. This is about a fifth of the total amount of time they say they spend each week, on average, working for pay, hanging out with friends, and engaging in sports or hobbies, and only a little more time than they say they spend talking on the phone. However, the variation on these factors is roughly what might be expected. That is, students from homes with greater education and income levels and who aspire to more competitive four-year colleges and universities tend to study more and work less. No group of students, by the way, spends significant amounts of time volunteering or engaging in community service activities.

Other findings from this survey seem particularly noteworthy. When asked why they wish to continue education after high school, these students provide rationales that reflect those used to justify the recent reform of Kentucky's system of postsecondary education. Indeed, they strongly endorse economic rather than traditional academic values for continued formal learning and do so at higher rates

than the national average. Thus, the contemporary public discourse about higher education, which focuses almost exclusively on the economic benefits of more schooling, seems to be having a trickle-down effect on students.

Ironically, though sample students tend to see higher education as a route to a better-paying job and greater career options, they do not know much about the financial aid options that might be available to them when they pursue postsecondary learning opportunities. Most have not heard of the federal and state programs that are available, although the recently created KEES scholarship seems to be on the radar screen of many. Whether this relative lack of knowledge will have any significant effect on these students' college attendance is unknown.

Though these students are strongly influenced by the potential economic payoff of postsecondary education, their basic decisions about what kind of learning opportunities to pursue are influenced primarily by their closest acquaintances. In addition to themselves, the students are most influenced by their parents and their friends. With the exception of their high school teachers, who also have a modest influence, the school seems to play only a small role in their postsecondary choices.

A particularly striking finding regarded how early these students say they decided to pursue higher education. Nearly half say they decided to pursue higher education in elementary school, and an overwhelming majority decided by the end of middle school. This renders problematic the notion that student attitudes toward higher education can be easily shifted, given that most decisions seem to be made early in life while extant policies for persuading students about college focus on the mid- to late-high school years.

As noted, Kentucky's students, like their counterparts elsewhere across the United States, spend a substantial amount of time outside of school working for pay. This contrasts dramatically with how students in other countries say they spend their time. Although many sample students do not work so much that their academic work is likely to suffer grave harm, about 40 percent of these students work more than that threshold amount (more than 15 hours per week) that is associated with academic decline. In addition, even though more U.S. students pursue higher education than students in other countries, they spend less time out of school preparing for those experiences than their international counterparts. This could be due to the economic rationale for more schooling that dominates political rhetoric and creates expectations that educated persons are good consumers but not necessarily better citizens, a more traditional outcome of higher education and one more likely to be found among faculty members in institutions the students will attend.

Although a number of Kentucky's students who are among the academically best prepared for higher education choose to go out of state for their college or university experience, the evidence of a massive brain drain from the Commonwealth is limited. Both in terms of the differences in numbers of students leaving the state and those coming in from other states, Kentucky is in the middle of the pack nationally. The Commonwealth is neither a large importer nor a large exporter of students. Of course, because these results are in terms of numbers of

students rather than how successful their high school academic experiences have been, it is true that some talented students are leaving Kentucky. This raises interesting questions about whether such students tend to return to the state and bring with them the skills, knowledge, and insights gained from being educated in other states' colleges and universities.

Moreover, these highly able students who wish to leave Kentucky for college also tend not to try as hard as other sample students on the state's CATS assessments, nor do they tend to view Kentucky as a place where they can succeed. Why these students have such negative attitudes toward the state is unclear from the survey and warrants greater attention.

Our inclination is to allow Kentucky citizens to examine these survey results thoughtfully and draw their own conclusions based on the findings. However, we would like to offer a few of our own opinions about Kentucky's college-bound high school students—although these largely echo many of the findings that have already been discussed above—as well as a few recommendations for policy action in the coming years. First, most of the students in our sample appear to fare well academically and socially and compare favorably to college students across the nation. We are therefore optimistic about the future of higher education in the Commonwealth, at least as far as the regular pipeline supplying students into Kentucky colleges and universities is concerned. Though the survey reveals that some academically able students anticipate going outside the state for college, Kentucky also imports talented students from other states, and many of those who study elsewhere, even in prestigious colleges or universities, presumably return to the Commonwealth after they complete their formal education.

We are less sanguine, though, about the state's non-college-bound youth, most of whom did not respond to our collaborative survey. We do not know, for example, if middle class students from around the state who are postponing decisions about college will decide to heed the Council's call for greater enrollment or will choose other routes. And both research and experience strongly suggest that students from the educationally and economically disadvantaged sectors of Kentucky society will likely face substantial barriers to college attendance and will need special attention by policymakers and school personnel if they are to participate in higher education.

It also appears to us that Kentucky students may be too intellectually invested in the notion that higher education opportunities should be pursued because of economic benefits. We certainly understand the political value of arguments regarding the economic usefulness of higher education; such arguments probably must be made to convince skeptical taxpayers to fund elementary, secondary, and postsecondary initiatives such as KERA and HB 1. We believe, however, that if such arguments are not balanced in public discourse by the other strong rationales for higher education, Kentucky's students may become disillusioned with the college experience. They may eschew courses and experiences in the arts, humanities, and social sciences that could broaden their perspectives as citizens and enrich their lives, yet do not provide an obvious occupational or career benefit. It is true, for reasons having to do largely with our market economy, that many ca-

reers vital to our quality of life are not well remunerated; one thinks of teaching, social work, law enforcement, and other vital public service roles. It is possible that students who have heard the slogan "education pays" offered over and over by political and social leaders will turn away from such careers if public discourse surrounding postsecondary opportunities does not place greater emphasis on noneconomic rationales for higher education.

We certainly believe, of course, that most students who obtain a college education will benefit economically from that investment in learning. Indeed, the families of our own sample students illustrate the striking relationship between education and income. As we reported in Table 5, just over 36 percent of these students come from homes with annual incomes of $40,001 to $70,000, and almost another 30 percent from homes with incomes above $70,000—this in a state with an average per capita income of $21,551 in 1998 and an average private sector wage of $25,359 in 2000.[33] Of the students in these two highest income categories, nearly six in ten of them had one or both parents with a college degree. Of those in the above-$70,000 category, almost three fourths had one or both parents with a college degree. On the other hand, about a quarter of those in the $20,001 to $40,000 category had one or two college-educated parents, while 40 percent of those in the top two income categories had parents with no college degree. Our point in reciting these statistics is simply that possessing a college degree increases the likelihood of a good income, but cannot guarantee one. We think political leaders should balance their promotion of the economic payoff of higher education with equally forceful rhetoric about the social, personal, and civic virtues of postsecondary learning.

Third, and perhaps relatedly, Kentucky high school students, even the most gifted ones, devote little of their time—and possibly their attention as well—to academic matters. As noted, these students do not seem to be spending their time differently from other American youth. Nor are we in favor of turning our youth into scholastic automatons. Rather, we think young people ought to lead well-balanced lives that help them mature and introduce them to many aspects of community life. It concerns us, however, that both general American culture and an increasingly consumerist- and entertainment-oriented youth culture pressure high-school-age youth to spend so much time in paid employment and undefined socializing with their peers and such a modest chunk of their time enhancing their academic skills. This general situation implies a lack of commitment to learning that is hard to reconcile with the Council's goals for advancing higher education in Kentucky. We have noted, of course, that survey students appear to be academically sound, based on their GPAs and on the college prep courses they say they have taken or plan to take. It appears to us, however, that both the students and the institutions in the state would benefit in both tangible and intangible ways if students took scholastic work more seriously. Doing so would certainly make the transition to college less traumatic for many, and it would increase the likeli-

[33] Figures on income and wages from the Kentucky profile in Southern Growth Policies Board, *Invented Here: Toward an Innovation Driven Economy*, June 2000. Available at: www.southern.org.

hood that those with more modest postsecondary aspirations might elevate their goals as they become comfortable with the college experience.

Fourth, and in a more positive vein, Kentucky's investment in education technology in public schools, which has been a component of KERA from its inception, seems to be reaping rewards as far as students' facility with software is concerned. Of course, given the rate at which computers have spread to homes across Kentucky and the rest of America, many students would be learning these skills even if schools had nothing more than antiquated typewriting equipment. Yet these survey results suggest students are learning many key skills in schools, and that schools can help close the digital divide that may exist between homes that can afford computer equipment and Internet services and those that cannot. It is perhaps an irony, of course, that students with first-rate technology skills might accept well-paying technology job offers even before they graduate from high school and therefore choose *not* to enroll in a postsecondary program. Indeed, if Kentucky succeeds in attracting high-technology businesses due to solid computer training in the state's high schools, this problem could worsen.

Finally, we are struck by several findings, which together suggest the magnitude of the problem Kentucky faces in dramatically increasing postsecondary enrollment. For one thing, college-bound youth in the state set their sights on higher education much earlier in life than we anticipated and do so at the behest of family members and friends rather than school personnel. For another, high school students, even those from well-educated and sophisticated families, seem to know very little about financing higher education or about how much college actually costs. Presumably their parents might have a better idea of college costs and financing options, but that is a matter for another study. Nevertheless, given these findings, it is unclear to us exactly what roles schools themselves can play in addressing the college aspirations of students in first-generation families or their need for technical knowledge about such things as finance options.

Our recommendations—which we cast in general terms—follow from the survey results and these general observations, although they are offered here in no particular order.

RECOMMENDATION AREA I: PUBLIC DISCOURSE ABOUT HIGHER EDUCATION

Opinion leaders in the state, from lawmakers to newspaper editorialists, teachers and principals, business people, mayors and magistrates, members of the clergy, and factory workers should consider altering higher education discourse to promote noneconomic justifications for postsecondary education. As we noted earlier, there is not always a direct or clear linkage between higher education and financial rewards, so we should not be misleading students along these lines, thus setting them up for disillusionment, or unintentionally preparing them to reject enriching learning experiences that might not have a direct economic payoff. Put more positively, a better conversation about higher education could

create more consistency between what students expect and what they might find in postsecondary institutions. We believe Kentucky colleges and universities can become centers for creating citizens who are both humane and thoughtful, as well as knowledgeable and successful. In our estimation, we are more likely to achieve this goal by modifying our collective discourse about higher education to emphasize noninstrumental rationales as much as economic ones.

Fortunately, Kentuckians can find inspiration for such discourse that is but two decades old. In 1981, a special committee of civic activists led by sage and elder statesman Ed Prichard released a report on higher education in the Commonwealth. That report provided a detailed listing of the purposes of higher education the committee viewed as important, most of which centered on the development of humane, healthy, broad-minded citizens and only secondarily emphasized the economic benefits of postsecondary learning. This stands in contrast, we believe, to the more recent documents produced by the Council, which focus more on the monetary payoff of higher education and minimize goals such as self-fulfillment and good citizenship. (Excerpts from Prichard's report and from the Council's 1998 blueprint are provided in Appendix C.) There may be a curious paradox here. A criticism of traditional justifications of higher education is that schools trained workers, while colleges and universities educated an elite. The economic rationale for the current postsecondary initiative is egalitarian in the sense that it wishes to train everyone. We believe it would be valuable to the Commonwealth to have a serious conversation about the purposes of higher education. Perhaps we would conclude that if there is to be more education for more persons, then everyone should be educated to a higher level than they are now.

It is also likely that such a public conversation about higher education would help us as Kentuckians think more coherently about what might be reasonable targets for postsecondary enrollment growth in the coming decades. The Council has provided us with one set of goals, along with a rough set of steps its members believe we should take to achieve them. But there is no reason to believe other viable approaches to postsecondary enrollment growth might not be considered and possibly pursued—we simply do not know the likely outcome of such a discussion.

RECOMMENDATION AREA II: PROMOTING POSTSECONDARY ENROLLMENT

Policymakers will need to develop new mechanisms for encouraging postsecondary enrollment. Current programs and efforts alone seem to us insufficient to meet the Council's higher education enrollment growth goals. The focus of new efforts should *not* be students such as those in our survey, who already intend to pursue formal learning after high school. Rather, students who are not currently deemed to be college bound, and especially first-generation students, should be targeted, and targeted early—by middle school, if not elementary

school—if they are to be convinced of the importance of higher education and learn the steps they must take to be successful.

We are not sure how best to structure such efforts, and suspect that approaches might differ from community to community. We are also loath to place this burden on the public schools, which are already being asked to do more than they can. Perhaps one approach would be for entities *other* than elementary and secondary schools to undertake this task of educating youngsters about higher education and about the financial options that might make it feasible for them to attend—local businesses, YMCAs, Rotary clubs, local libraries, churches, even colleges and universities themselves could all be involved.

Another approach might be to encourage Kentucky's public universities, community and technical colleges, and independent colleges to make introductory-level postsecondary courses more easily available to high school juniors and seniors, especially those from disadvantaged backgrounds. Course credits could count toward high school graduation or college (or both). Such exposure to courses, professors, campuses, and more mature students would familiarize high school students with the college setting and expectations, and might convince many of the feasibility of higher learning for them. Such an arrangement would take an enormous amount of cooperation and coordination among institutions that have traditionally not intersected one another very often. It would also take changes in many extant policies and probably funding from Kentucky's legislature and local boards of education. But this might be an effective means of increasing postsecondary enrollment. It might also increase the high school completion rate by providing new options for students tired of the regular secondary school setting. It might even reduce the pressure on high schools that have a hard time staffing certain teaching positions. We suggest that Kentucky's P-16 Council, which includes members of the Kentucky Board of Education and the Council on Postsecondary Education, pursue this strategy, and suspect some of this may already be taking place in certain communities in the Commonwealth.

Developing these and other initiatives will take creativity and at least modest resources. Yet without these things, we predict both that the Council's enrollment goals will likely not be met and that postsecondary learning will remain a middle- and upper-class luxury.

Recommendation Area III: Educating about Postsecondary Costs

We think it appropriate for various state agencies, including the Council and the Kentucky Higher Education Assistance Authority (KHEAA), to work more closely together and more vigorously to provide financial information about postsecondary education opportunities to Kentucky families. KHEAA, which is part of the state's Finance and Administration Cabinet, already maintains a website (www.kheaa.com) with a range of information about college costs, scholarships, loans, and so forth, and also publishes hard copies and electronic versions

of helpful publications. Given our survey results, however, we think KHEAA should be assisted in its education task by the Council, Kentucky colleges and universities, and other organizations in spreading the word about actual postsecondary costs, innovative financing approaches, and the like. Kentucky might also engage the talents and inspiration of high school students who are studying technology by encouraging them to design their own websites or learn games around the nuts and bolts of higher education. This might be a way to combine the previously cited leveling effects of technology education in schools with worthwhile learning exercises about postsecondary opportunities and benefits. This could be especially beneficial, we would add, as opportunities increase for Kentucky students to pursue higher education either in part or completely over the Internet, a trend we expect will accelerate in coming years.

RECOMMENDATION AREA IV: INCORPORATING INDEPENDENT COLLEGES AND UNIVERSITIES IN THE EFFORT

We also commend to readers a study just released that was commissioned by the Association of Independent Kentucky Colleges and Universities.[34] As that report notes, the 19 member institutions are geographically distributed across Kentucky, and many are actually in or adjacent to 59 of the 66 counties the Council has targeted as most lagging in enrollment. In addition, on average, they cost 36 percent less than the national average for these types of institutions, and two of them—Berea College and Alice Lloyd College—target economically deprived Appalachian youths and charge no tuition at all. As discussed in the first section of this report, these institutions now educate about a fifth of all four-year college students in Kentucky. They could, with encouragement and incentives, educate a greater portion of the state's new postsecondary students. Yet HB 1 has focused most attention, and virtually all additional resources, on public institutions in the state. We suggest that the Council and state legislators seriously consider the various recommendations in this study to strengthen these institutions and enhance the role they can play in meeting Kentucky's postsecondary enrollment and completion goals.

We are reluctant to offer the traditional parting comment, "More research is needed!" However, this survey has revealed numerous questions that we believe ought to be pursued more systematically, through various methodologies, and over longer periods of time than a snapshot survey allows. For example, we need to know more about the brain-drain issue. Do gifted Kentucky students come back to live and work in the Commonwealth, or does their departure for college

[34] MGT of America, *The Role and Effectiveness of the Independent Colleges and Universities in Kentucky* May 2001.

elsewhere signify that they will not likely return? Also, what are the characteristics of the students that Kentucky imports, and do these students journey back to their own states or settle in Kentucky after graduation? Another issue ripe for inquiry involves the role, both actual and potential, of utilizing guidance counselors for encouraging greater postsecondary enrollment. As noted earlier, these individuals barely registered as influences on the higher education decision-making process of the students in our sample. Are counselors too occupied with other concerns to provide information about higher education, or are they effective in engendering postsecondary interest among the types of students who are not in our sample?

Here, we have only scratched the surface of a great many issues. We believe policymakers and researchers ought to collaborate to field a survey that results in a random sample of Kentucky high school students so that we can learn more about students who are not currently planning postsecondary attendance. If they are influenced for or against higher education by different people and at different stages in their lives, this would be crucial to know. Moreover, results of a survey with a larger and more representative sample of all Kentucky high school students could be compared with information that will be emerging over the next year or two based on the 2000 Census. The latter data should allow us to say much more about demographic, economic, and social trends within Kentucky, especially its rural and growing metropolitan areas. These should, in turn, help us understand how population shifts may affect postsecondary enrollment and either lessen or magnify the challenges to its increase.

APPENDIX A

THE KENTUCKY HIGH SCHOOL SURVEY

In February and March of 2000 the Division of Driver Licensing generated a list of randomly selected 16- and 17-year-old Kentuckians, which included 1,500 16-year-olds and 1,500 17-year-olds in the sample. The University of Kentucky Survey Research Center administered the survey. The 4-page, 39-question survey was mailed to these 3,000 individuals June 2-8, 2000. The survey was closed on August 29, 2000, with 1,088 total completions included in the data. Among responses, 85 were considered ineligible, and 1,827 respondents did not answer the survey. The response rate was 37.3 percent (1,088 divided by 2,915). Table A.1 shows some sample characteristics.

TABLE A.1
Kentucky High School Students, Sample Characteristics

	Variable	Frequency
AGE	15	1
	16	517
	17	551
	18	11
	Frequency Missing	8
YEAR OF HIGH SCHOOL	Freshman—9th Grade	6
	Sophomore—10th Grade	93
	Junior—11th Grade	812
	Senior—12th Grade	161
	Was not in school on 4/1/00	13
	Frequency Missing	3
GENDER	Female	616
	Male	469
	Frequency Missing	3
RACE	American Indian/Alaskan Native	15
	Asian	10
	Black, African-American	22
	Hispanic, Latino	11
	White	1028
	Other	1
	Frequency Missing	1
TOTAL HOUSEHOLD INCOME, 1999	Less than $20,000	108
	$20,000 to $40,000	232
	$40,001 to $70,000	361
	More than $70,000	293
	Frequency Missing	94
GPA	1.50 to 2.50	70
	2.51 to 3.00	215
	3.01 to 3.50	305
	3.51 to 4.30	425
	Frequency Missing	73

APPENDIX B

Talk Back! It's your education and your future!

Tell us about yourself, your background, and how you spend your time . . .
Circle the number of the answer you choose or fill in the blank.

1. How old were you on April 1, 2000? _____
2. What year of high school were you in on April 1, 2000?
   1. Freshman (9th grade)
   2. Sophomore (10th grade)
   3. Junior (11th grade)
   4. Senior (12th grade)
   5. Was not in school April 1, 2000
3. What is your gender?
   1. Female
   2. Male
4. What is your race or ethnic identity? **CIRCLE ALL NUMBERS/ANSWERS THAT APPLY.**
   1. American Indian or Alaska Native
   2. Asian
   3. Black/African-American
   4. Hispanic/Latino
   5. White
   6. Other
5. Which of the following best describes your family's total household income before taxes in 1999 (the household where you live)?
   1. Less than $20,000
   2. $20,000 to $40,000
   3. $40,001 to $70,000
   4. More than $70,000
6. What is the highest level of education your mother completed?
   1. Less than a high school diploma
   2. High school diploma or GED
   3. Some college (less than a 4-year degree)
   4. 4-year college degree or higher
7. What is the highest level of education your father completed?
   1. Less than high school diploma
   2. High school diploma or GED
   3. Some college (less than a 4-year degree)
   4. 4-year college degree or higher
8. Which of the following best describes who you now live with?
   1. Both my parents
   2. One of my parents
   3. Partly with my father and partly with my mother
   4. Alone or with friends
   5. Guardians or relatives other than my parents
   6. Foster parents
9. What **COUNTY** do you live in? (For example, Adair, Fayette, Jefferson, Pulaski, or Whitley)

   _____
10. What is your overall grade point average (out of a 4.0) in high school so far? (For example, 3.2)

    _____

11. During the school year, about how many hours a week do you spend doing the things listed below?
    CIRCLE ONE NUMBER/ANSWER FOR EACH ACTIVITY.

	None	Less than 1 hour	1-2 hours	3-5 hours	6-10 hours	11-15 hours	16-20 hours	Over 20 hours
Homework and studying outside of class	1	2	3	4	5	6	7	8
Hanging out with friends	1	2	3	4	5	6	7	8
Participating in sports, hobbies	1	2	3	4	5	6	7	8
Watching television or playing video games	1	2	3	4	5	6	7	8
Using the computer for fun	1	2	3	4	5	6	7	8
Working (for pay)	1	2	3	4	5	6	7	8
Doing chores at home or caring for children	1	2	3	4	5	6	7	8
Spending time with family	1	2	3	4	5	6	7	8
Volunteering or performing community service	1	2	3	4	5	6	7	8
Reading a newspaper	1	2	3	4	5	6	7	8
Using the Internet or a computer for research or homework	1	2	3	4	5	6	7	8
Talking on the telephone	1	2	3	4	5	6	7	8

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Tell us about your experience with computers . . .

12. Do you have access to a personal computer at home?
    1. Yes
    2. No

13. Do you have access to the Internet (World-Wide Web) at home?
    1. Yes
    2. No
    3. Don't know

14. How interested would you be in using the Internet to take college classes in the next three years?
    1. Very interested
    2. Somewhat interested
    3. Not interested

15. How capable are you of performing the following computer skills? **CIRCLE ONE NUMBER/ANSWER FOR EACH SKILL.**

Computer Skills	Can do without any help	Can do with some help	Can do with a lot of help	Can't do it
Use a spreadsheet to analyze data	1	2	3	4
Format documents using a word processor (for example, set margins, change fonts and type size)	1	2	3	4
Use the Internet to find information for a specific project	1	2	3	4
Use e-mail to communicate or to send and receive attachments	1	2	3	4

Tell us about more about your high school experiences . . .

16. Where did you acquire the following computer skills? **CIRCLE ONE NUMBER/ANSWER FOR EACH SKILL.**

Computer Skills	Mostly outside of high school	Mostly in high school	Never learned
Use a spreadsheet to analyze data	1	2	3
Format documents using a word processor (for example, set margins, change fonts and type size)	1	2	3
Use the Internet to find information for a specific project	1	2	3
Use e-mail to communicate or to send and receive attachments	1	2	3

17. What are your plans for the following high school courses? **CIRCLE ONE NUMBER/ANSWER FOR EACH COURSE LISTED.**

	Have taken	Now Taking	Plan to take	Don't plan to take	Not offered at my school
Algebra II or its equivalent	1	2	3	4	5
Chemistry I or Physics I	1	2	3	4	5
Foreign Language (2 years)	1	2	3	4	5
Advanced Placement (AP) Courses	1	2	3	4	5
Kentucky Virtual High School Class(es)	1	2	3	4	5

18. Have you been advised by a teacher or counselor at your high school to take pre-college classes?
    1. Yes
    2. No

19. Have you been advised by a teacher or counselor at your high school to take the ACT or SAT assessment test?
    1. Yes
    2. No

20. In your junior and senior years of high school you are required to take the CATS tests (Commonwealth Accountability Testing System), formerly known as the KIRIS tests. These tests are designed to assess your academic progress, your high school's overall academic performance, and to provide a basis of comparison with other Kentucky students and schools. When you take the CATS test, how hard do you try to really do well?
    1. I do my very best
    2. I try
    3. I don't try at all
    4. I have not taken the CATS tests

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21. What letter grade would you give your high school on its performance in the following academic and support services? **CIRCLE THE NUMBER FOR THE LETTER GRADE YOU WOULD GIVE EACH SUBJECT. CIRCLE "6" OR "NA" (NOT APPLICABLE) IF YOU HAVE NOT TAKEN THESE COURSES OR THEY ARE NOT OFFERED AT YOUR SCHOOL.**

	A	B	C	D	F	NA
Math	1	2	3	4	5	6
Physical Science	1	2	3	4	5	6
Social Science	1	2	3	4	5	6
English	1	2	3	4	5	6
Foreign Language	1	2	3	4	5	6
Computer Skills	1	2	3	4	5	6
Career Education/Planning	1	2	3	4	5	6
Textbooks/Materials	1	2	3	4	5	6
Grading Procedures	1	2	3	4	5	6

22. Based on your experience over the past year, how strongly do you agree or disagree with the following statements? **CIRCLE ONE NUMBER/ANSWER FOR EACH STATEMENT.**

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
I feel overwhelmed by all I have to do.	1	2	3	4
I will have to move out of state to succeed.	1	2	3	4
I will have to leave my hometown or county to succeed.	1	2	3	4
My parents know what is happening at my school.	1	2	3	4
My parents talk to my teachers about me.	1	2	3	4

What are your plans for the future?

23. Are you planning to go to a university, a college, or a community or technical college after your graduation from high school?
    1. No
    2. Yes ——→ ***Skip to Question 26***

24. What do you plan to do during the year following your graduation from high school? **CIRCLE ALL NUMBERS OF ANSWERS THAT APPLY.**
    1. Work full-time
    2. Work part-time
    3. Enter the military
    4. Go to trade or vocational school
    5. No plans
    6. Other

25. Why did you decide not to go to college, a university, or a community or technical college after graduation from high school? **CIRCLE ALL NUMBERS OF ANSWERS THAT APPLY.**
    1. My grades aren't good enough.
    2. I don't have enough money to go to college.
    3. I want to be able to buy the things I want now.
    4. My family needs my help now.
    5. No one in my family has ever gone to college.
    6. It takes too long to get a college education.
    7. The nearest college is too far away.
    8. I don't know how to get into a college.
    9. I'm not going to graduate from high school.
    10. I don't think I would fit in at a college.
    11. Other _____

26. When did you decide what you would do after high school?
    1. In elementary school
    2. In middle school
    3. In my freshman or sophomore year of high school
    4. In my junior or senior year of high school
    5. Have not yet decided

27. Who most influenced plans for your future after high school? **CIRCLE ALL NUMBERS OF ANSWERS THAT APPLY.**
    1. Elementary school teacher(s)
    2. Middle school teacher(s)
    3. High school teacher(s)
    4. Parents
    5. Middle school guidance counselor
    6. High school guidance counselor
    7. Friends
    8. Church/Scout/youth leader or coach
    9. Employer
    10. Relative
    11. Myself
    12. Other _____
    13. No one
    14. Have no plans

28. How would you describe your parents' or guardians' attitudes about your going to college?
    1. Very encouraging
    2. Somewhat encouraging
    3. They have no opinion
    4. Somewhat discouraging
    5. Very discouraging

29. How much of an obstacle do you think cost of going to college will or would be to your going to college?
    1. Not an obstacle
    2. Somewhat of an obstacle
    3. A major obstacle

30. How much of an obstacle do your parents or guardians think the cost of going to college will or would be to your going to college?
    1. Not an obstacle
    2. Somewhat of an obstacle
    3. A major obstacle

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31. Thinking of the 4-year public university nearest you in Kentucky, about how much do you think **one year of education, including tuition, books, and room and board**, now costs there?

    $ _____

32. How long does it take to drive from where you live to the nearest university, college, community college, or technical college?
    1. Less than ½ an hour
    2. ½ hour to 1 hour
    3. 1 hour to 2 hours
    4. 2 hours or more

33. Which of the following sums do you think comes closest to how much **MORE** the average U.S. college graduate with a 4-year degree now earns **in a year** compared to the average U.S. high school graduate?
    1. $ 5,000
    2. $ 9,000
    3. $14,000
    5. $18,000
    6. $22,000

34. Have you chosen a career?
    1. Yes
    2. No ——→ ***Skip to Question 36.***

35. If yes, what do you plan to become? (For example, electrician, engineer, fireman, or teacher)

    _____

36. **On a scale of 1 to 5 with 1 being not at all familiar and 5 being very familiar**, how familiar are you with the following state and federal financial aid tools that assist students with financing for a university, community or technical college? **CIRCLE ONE NUMBER/ANSWER FOR EACH ITEM LISTED.**

	Not at All Familiar→Very Familiar				
Pell Grants	1	2	3	4	5
Supplemental Education Opportunity Grants	1	2	3	4	5
Work Study Programs	1	2	3	4	5
Perkins Loan Program	1	2	3	4	5
Stafford Loan	1	2	3	4	5
PLUS Loan	1	2	3	4	5
Federal Student Aid Information Center	1	2	3	4	5
Kentucky Educational Excellence Scholarship (KEES)	1	2	3	4	5
College Access Program (CAP)	1	2	3	4	5
Kentucky Tuition Grant (KTG)	1	2	3	4	5
Free Application for Federal Student Aid (FAFSA)	1	2	3	4	5
Kentucky Higher Education Assistance Authority (KHEAA)	1	2	3	4	5

If <u>you do not plan to go to college</u> after high school, you have completed the survey. Please place your survey in the pre-paid envelope provided for you and drop it in the mail. Thank you very much for completing this survey.

If <u>you plan to go to college</u>, go on to Question 37.

About your plans for college . . .

37. Where do you plan to go to college in the year following your graduation from high school?
    1. A public community or technical college in Kentucky
    2. A public, 4-year university in Kentucky
    3. A private, 4-year college in Kentucky
    4. A 4-year college out of state
    5. A trade or business school

38. **On a scale of 1 to 5 with 1 being not at all important and 5 being very important**, how important to you are each of the following reasons for your going to a university, community or technical college? **CIRCLE ONE NUMBER/ANSWER FOR EACH STATEMENT.**

	Not at All Important→Very Important				
My parents want me to go.	1	2	3	4	5
I want to become a more cultured person.	1	2	3	4	5
I want to get a rewarding, challenging job.	1	2	3	4	5
I want to make more money.	1	2	3	4	5
I want to prepare for graduate/professional school.	1	2	3	4	5
I want to train for a specific career	1	2	3	4	5
I want to learn more about things that interest me.	1	2	3	4	5
I want to get away from home.	1	2	3	4	5

39. Approximately how much financial help with the cost of college do you expect to get each year from the following sources? **CIRCLE ONE NUMBER/ANSWER FOR EACH SOURCE LISTED.**

	None	$1-$499	$500-$1,499	$1,500-$3,000	O $
Full-time job	1	2	3	4	
Part-time job	1	2	3	4	
My own savings	1	2	3	4	
Parents, other relatives or friends	1	2	3	4	
Financial aid (student loans, grants, scholarships))	1	2	3	4	

Thank you very much for completing this survey.

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APPENDIX C

EXCERPTS FROM *IN PURSUIT OF EXCELLENCE*

Report of the Committee on Higher Education in Kentucky's Future
Ed Prichard, Chair
Frankfort, Kentucky, 1981
Council on Higher Education

This Committee believes that learning ought to continue throughout one's lifetime. So that learning might continue, an educated person should master a broad range of competencies:

> *The educated person must be proficient at advanced levels in certain basic skills: the ability to read and assimilate information, the ability to analyze and formulate concepts and ideas, the ability to use mathematical and fundamental statistical knowledge, and the ability to communicate information and ideas to others in writing and by other means.*

An increasingly complex and technical society, with tools such as calculators and computers that superficially make basic skills unnecessary, makes these skills all the more necessary. High levels of proficiency in basic intellectual skills will help eliminate in people the sense of helplessness they sometimes experience in the face of often confusing, complex, and highly technical information.

> *The educated person must be able to build reasoned generalizations from knowledge and to apply knowledge of specifics and general principles about one area to others.*

The abilities to reason from specific information to general principles and to transfer knowledge among areas are at the heart of an individual's ability to understand society and himself and to function effectively within society.

> *The educated person must be able to analyze and resolve problems.*

A person's application of intellectual power to meet social and personal needs and to solve technological, social, environmental, and economic issues of the future is achievement at the highest level. However, such achievement requires that one have understanding of social institutions, fundamentals of science and the scientific method, the nature of economic systems and processes, and characteristics of our natural and manmade environment, as well as the sensitivity toward the human condition that is transmitted through humanistic reflection and the study of the arts and literature.

> *The educated person must have the capacity for introspection and for developing personal values.*

Familiarity with and the understanding of ethical and religious concepts and principles, basic philosophical propositions, one's cultural heritage and place in

the stream of history, and tolerance for the ideas of others are at the heart of this capacity. Educated persons should be responsible family members, citizens, and workers.

The educated person must be able to communicate effectively.

The ability to communicate will be challenged by change in our society. Effective communication not only requires traditional verbal and listening skills, but also the ability to communicate complex information both to peers and to those who are less knowledgeable. Failures in communication between the governors and the governed or between the well educated and the less well educated lead to divisions in society.

The educated person must understand his intellectual, cultural, and social heritage and the implications of that heritage.

Without such understanding, individuals are unable to fully understand themselves, their personal heritage, or the society around them. This understanding is fundamental to the development of personal values.

Educated persons should have the skills necessary to support themselves and those dependent upon them and to contribute to the economic well-being of the society.

All of the preceding characteristics provide the foundations for contemporary "economic man," but specific skills directly related to occupations are also essential. However, education in specific occupational skills does not end with the completion of formal education; it must continue throughout a working lifetime. Also necessary is the ability to make informed judgments about the nature of the work that best suits the individual and the ability to understand the relationship of work to other aspects of one's life.

The educated person should have the desire, curiosity, and ability to continue to learn independently and to stay informed.

The seeds of curiosity, sensitivity to the importance of knowledge, and tolerance for new or unusual ideas must be planted early in life and nurtured throughout. The capacity for independent thought in the face of conventional wisdom requires personal courage, the ability to form and establish personal values, and a personal philosophy.

Educated persons must have the knowledge to effectively manage and improve their personal well-being.

Such knowledge requires basic familiarity with human nature, with emotional and psychological growth, and with the fundamentals of personal health and the human body.

Colleges and universities must not allow their concern with accommodation of student and societal preferences and with varying levels of student ability to divert them from their central purpose, that of helping students become educated persons able to continue to learn and grow.

EXCERPTS FROM *2020 VISION: AN AGENDA FOR KENTUCKY'S SYSTEM OF POSTSECONDARY EDUCATION*

Kentucky Council on Postsecondary Education
Frankfort, Kentucky, 2000

THE VISION:

We ask you to envision a Kentucky in the year 2020 recognized throughout the nation and across the world for having:

Educated citizens who want advanced knowledge and skills and know-how to acquire them; and who are good parents, good citizens, and economically self-sufficient workers.

Globally competitive businesses and industries respected for their highly knowledgeable employees and the technological sophistication of their products and services.

Vibrant communities offering a standard of living unsurpassed by those in other states and nations.

Scholars and practitioners who are among the best in the world, dedicated to creating new ideas, technologies, and knowledge.

THE CALL FOR CHANGE:

Pure and simple, Kentuckians deserve this future. That is why our public leaders have set a goal that puts Kentucky on a path to achieving economic opportunity and a standard of living above the national average in 20 years. The key to achieving this goal is lifelong learning.

A responsive and flexible system of postsecondary education is the most important tool we need to help Kentucky flourish in the early decades of the 21st century. Only through investment in postsecondary education with strong commitment to economic betterment can the Commonwealth and her people reach their full potential.

Selected Publications and Products from

KENTUCKY

LONG-TERM POLICY RESEARCH CENTER

📖⊙ **Purpose, Publications, and Products 2001** (2001) A guide to the Center's work, including a subject index to its reports and a comprehensive CD-ROM that features 43 videotaped interviews with some of Kentucky's most forward-looking citizens.

📖 **Education and the Common Good** (2001) A cost-benefit analysis of some of the rarely considered social benefits Kentucky realizes from an educated populace.

💻 **The Conference Proceedings: Kentucky and the New Economy & Challenges for the New Century** (2001) Gavel-to-gavel presentations and discussions from the Center's seventh annual conference in northern Kentucky.

📖 **Challenges for the New Century** (2000) Now in its second printing, the Center's fourth biennial trends report revisits the major trends that are influencing the Commonwealth's future.

📖 **Measures and Milestones 2000** (2000) Part of the Visioning Kentucky's Future project, a progress report on 26 long-term goals for the future. Includes results of a statewide citizen survey.

📖 **Collecting Taxes in the Cyberage** (1999) An assessment of the likely fiscal impact of online retailing on state revenue.

📖 **What Next for Kentucky Health Care?** (1999) New approaches to closing the widening gaps in access to health care.

📖 **Child Care in Kentucky** (1999) An examination of the quality of child care in Kentucky and five cost scenarios for improvements.

📖 **The Future Well-Being of Women in Kentucky** (1999) A collection of articles on issues of importance to Kentucky women.

📖 **Kentucky's Teachers: Charting a Course for KERA's Second Decade** (1999) An examination of progress toward the KERA goal to improve teacher quality in the Commonwealth.

📖⊙ **The Leadership Challenge Ahead** (1998) The third biennial trends report with a CD-ROM that includes Center reports, the budget game, and key interviews.

📖 **Civil Society in Kentucky** (1998) An analysis of the ties that bind us and a directory of 156 small-scale civic projects in the state.

📖 **Entrepreneurs and Small Business—Kentucky's Neglected Natural Resource** (1998) A report on the rising importance of entrepreneurship to development and Kentucky's capacity to grow from within. Includes results of five surveys.

📖 **Measures and Milestones** (1998) Part of the Visioning Kentucky's Future project, a progress report on 26 long-term goals for the future. Includes results of a statewide citizen survey.

📖 **The Circuits Come to Town** (1997) A report on technology use and public readiness for online government services.

💻 **The Kentucky State Budget Game** (1997) An interactive learning tool, this computer game puts players, students and interested citizens alike, in the seat of power. They make tough policy choices, balance the budget, and watch public support rise and fall. Download from our website or order on diskette.

📖 **$5.8 Billion and Change** (1996) An analysis of alternative future budgetary scenarios, driven by key trends influencing the state's future.

📖 **Choosing Prosperity: Maximizing Returns on Public Investment in Workforce Development** (1996) Cost-effective strategies for meeting workers and workplace needs.

📖 **Reclaiming Community, Reckoning with Change** (1995) A report on the transformational potential of broad civic engagement and community-based development.

📖 **Farms, Factories and Free Trade** (1995) An in-depth look at global prospects for rural industries and strategies for success.

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